

# CTO

The Magazine for Information Execu

HOW TO GROOM  
YOUR SUCCESSOR  
PAGE 60

SCHOOL FOR  
LEADERS:  
DOES BABSON  
BUILD 'EM BETTER?  
PAGE 146

SHHHH: THE CIA'S  
KNOWLEDGE  
MANAGEMENT  
STRATEGY  
PAGE 126

## NEW GIG

With one startup behind him,  
will former CIO Arthur Tisi  
make it on his own? PAGE 76

PLUS...

RATE THE STARTUP PAGE 102

HOW TO SUCCEED AS A DOTCOM CIO PAGE 90

 Circle the words that  
help you increase productivity.

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K | C | J | A | M | D | O | O | I | U | V | D | I | H | F | P | T |
| H | J | S | D | O | V | Y | W | S | Y | X | H | R | B | M | E | C |
| C | V | N | S | W | G | F | I | V | I | N | G | E | N | N | R | H |
| A | Y | B | A | I | H | G | T | C | R | C | U | O | O | D | F | G |
| M | R | N | T | F | D | Y | H | G | R | V | F | G | W | K | O | O |
| D | O | X | H | J | O | W | N | O | W | M | D | G | U | B | R | E |
| V | M | I | L | D | T | I | S | S | W | Z | Y | N | H | N | M | T |
| C | E | H | O | I | C | S | I | A | F | A | S | T | E | R | A | U |
| S | M | J | N | N | E | O | E | G | Y | M | E | D | E | K | N | G |
| B | O | C | A | C | U | H | V | W | R | P | R | K | O | N | C | P |
| J | S | H | O | V | C | E | N | Q | W | L | U | L | I | X | E | O |
| S | N | R | L | A | E | M | J | G | E | K | P | P | G | C | F | E |
| E | P | V | C | H | F | U | L | L | S | P | E | E | D | V | D | R |



1. AMD (see example)
2. Athlon
3. processor
4. now
5. with
6. full-speed
7. performance
8. enhancing
9. cache
10. memory

With speeds of up to 1 GHz, and now with full-speed performance-enhancing cache memory, the AMD Athlon™ Processor helps you take full advantage of your most demanding applications. This is just one of the many reasons AMD Athlon and AMD Athlon processor-based systems have already won more than 50 awards worldwide. Could more be on the way? Find out at [www.amd.com/productivity](http://www.amd.com/productivity).



# INTRODUCING THE SECURITY BUILT ON THE "ONE SIZE

It's called Symantec Enterprise Security. A flexible, modular solution for everyone who recognizes that enterprise security isn't an expense, it's an investment in your future. Symantec Enterprise Security is comprehensive, without being

Call us today at 800-745-6054, or visit  
[www.symantec.com/enterprise-security](http://www.symantec.com/enterprise-security)  
*for more information or to speak to a sales representative now.*

confining, so you can construct the solution that's right for you. We'll help assess your security needs and let you choose from among our best-of-breed, multi-platform Internet security products. Along with our world-class professional



# FIRST ENTERPRISE SOLUTION PRINCIPLE THAT FITS NONE."

services and support, you'll also have access to Symantec's security partners, and to the Digital Immune System™, our unique technology for detecting, defining and curing viruses. Symantec's content-filtering products let you manage Internet usage. Finally, our

intrusion prevention products assess, monitor and enforce predetermined security levels. So critical business and e-commerce assets stay secure. With Symantec Enterprise Security you'll have the technology and the confidence you need to do business in a connected world.

**SYMANTEC.**  
TM





***THERE'S NO SUBSTITUTE FOR AN EXPERIENCED PARTNER.***





©2007 Ariba Inc. All rights reserved.

Whether you're a street musician or a CEO, choosing the right partner can do wonders for your profits. Which explains why industry leaders like American Express, Cisco, and Hewlett-Packard have chosen Ariba. In fact, more companies use the Ariba B2B Commerce Platform™ to power their marketplaces and eProcurement systems than any other offering. If you want to get in on the act, call us at 800-535-3471 or visit [www.ariba.com/partner](http://www.ariba.com/partner).



A R I B A®

Making the net work for B2B™



# Inside

VOL. 13 • NO. 20 • AUGUST 1, 2000

## Features

### Special Report: Startups

**COVER STORY** Our special report points out the potholes and speed bumps on every corner of Startup Street.

*By Rick Pastore*

72

**PROFESSIONAL PROFILE** It's been a busy year for Arthur Tisi, former CIO at the Met who went on to try his hand at startup life. See why he is charged and raring to go. *By Matt Villano*

76

**LEADERSHIP** CIO brings together a dotcom veteran and a newcomer for a help session on leadership at a startup, including dealing with politics, coping with rapid growth and ensuring 24/7 uptime. *By Stewart Deck*

90

**BUSINESS MODELS** Does Portera have a winning business plan? You tell us. *By Emelie Rutherford*

102

### Fast, Cheap and Under Control 106

**PROJECT MANAGEMENT** Here's how one CIO and his team pulled off a massive global migration six months ahead of schedule. *By Derek Slater*

### Her Majesty's Flying IT Circus 114

**GLOBAL I.T.** The British are top-drawer when it comes to fumbling high-profile IT projects. We tour the rubble as the government preps its e-government push.

*By Malcolm Wheatley*



114



Christopher Olsen, chief of records at the CIA. 126

### The Langley Files 126

**CASE FILES: KNOWLEDGE MANAGEMENT** At the CIA, the secret to knowledge management was hiding in plain sight. *By Elana Varon*

### Uncle Sam Wants You 132

**GOVERNMENT: I.T. STAFFING** The pay? It's less. Dotcom? Try dotgov. As public-sector CIOs struggle to lure IT talent, they borrow ideas from business—and make do with less. *By Elana Varon*

### CIO U. 146

**EXECUTIVE TRAINING** Babson's IT leadership program takes technologists on a fast-track ride. *By Tracy Mayor*

### Jeff Bezos Takes Everything Personally 160

**INTERVIEW: E-BUSINESS** Striking a "What, me worry?" pose in the e-tailer shakeout, Amazon.com founder Jeff Bezos and his executives remain focused on winning customers one at a time. *By Malcolm Wheatley*

MORE ►►►

Cover photo by Jason Homa



# When It Comes To Security, Only eTrust Can Protect You Like This.



Security is the number one concern of every IT professional. The good news is that there's a proven solution you can trust.

## Without Bullet-Proof Security, Successful eBusiness Is Impossible

The only thing bigger than the opportunity that comes with putting your business on the Web is all the risk that goes with it.

Undetected attacks can strike at any time, from anywhere, in a variety of forms. Most sites can't even track every attempt. And new threats are developed every day, all over the world.

Without the right protection, eCompanies risk losing everything: data, customers, revenue, and more.

## A Simple Solution To Your Most Complicated Challenge

Online business through eCommerce, corporate intranets, partner-to-partner transactions on extranets and websites, all need to be secured. Protecting the integrity and availability of intranet information is critical to all organizations.

Unfortunately, in the race to become Web-enabled, security has taken a back seat. IT managers often give themselves a false sense of security with a standalone or partial security solution. They forget that eCompanies need an integrated and comprehensive security solution that provides best-of-breed functionality.

## eTrust Enables eBusiness

eTrust™ provides all the security solutions an eBusiness needs:

**COMPREHENSIVE** — From the browser to the mainframe, ensuring complete security in today's highly complex environments.

**BEST-OF-BREED** — eTrust solutions offer best-of-breed functionality across the board.

**INTEGRATED** — All eTrust solutions are designed and built to work together seamlessly.

**EASY** — eTrust solutions are easy to use, deploy, and administer, ensuring any environment is secured quickly and correctly.

**MISSION-CRITICAL** — eTrust solutions offer the scalability, depth, and robustness fast-growing and successful eBusinesses need.

## eTrust Is Open And Extensible

eTrust allows you to leverage existing investments in security solutions — you will never have to start over or convert anything.

And eTrust can be implemented one function at a time or all at once — it's your choice.

And since eTrust is built on the Unicenter TNG® Framework™ it lets you snap-in other eBusiness management solutions as you grow and your needs change. eTrust is built on a standards-based, open infrastructure, so it's always easy to plug in any other standards-compliant products or solutions.



## eTrust Is Trustworthy

eTrust is not only backed by the world's leading security software company,\* it is also complemented by a complete set of outcome-based service offerings. CA Services™ stands ready to make sure your implementation is fast and trouble-free.

If your company is making the difficult transition to an eBusiness, you owe it to yourself to find out more about the security solution more eBusinesses trust.

**For more information,  
call 1-800-377-5327, or visit  
[www.ca.com/solutions/enterprise/etrust/](http://www.ca.com/solutions/enterprise/etrust/)**

**COMPUTER<sup>®</sup>  
ASSOCIATES**  
Software superior by design.

## eTrust Security Suite

- Access Control
- Administration
- Single Sign-On
- Firewall
- Content Inspection
- Intrusion Detection
- Policy Compliance
- Audit
- Virtual Private Network
- Encryption
- Directory
- OCSPPro
- Anti-Virus

**Backed By The #1 Security Software Company**

**Assess**

**Manage**

**Protect**

**Detect**

**Enable**

**eTrust<sup>™</sup>**

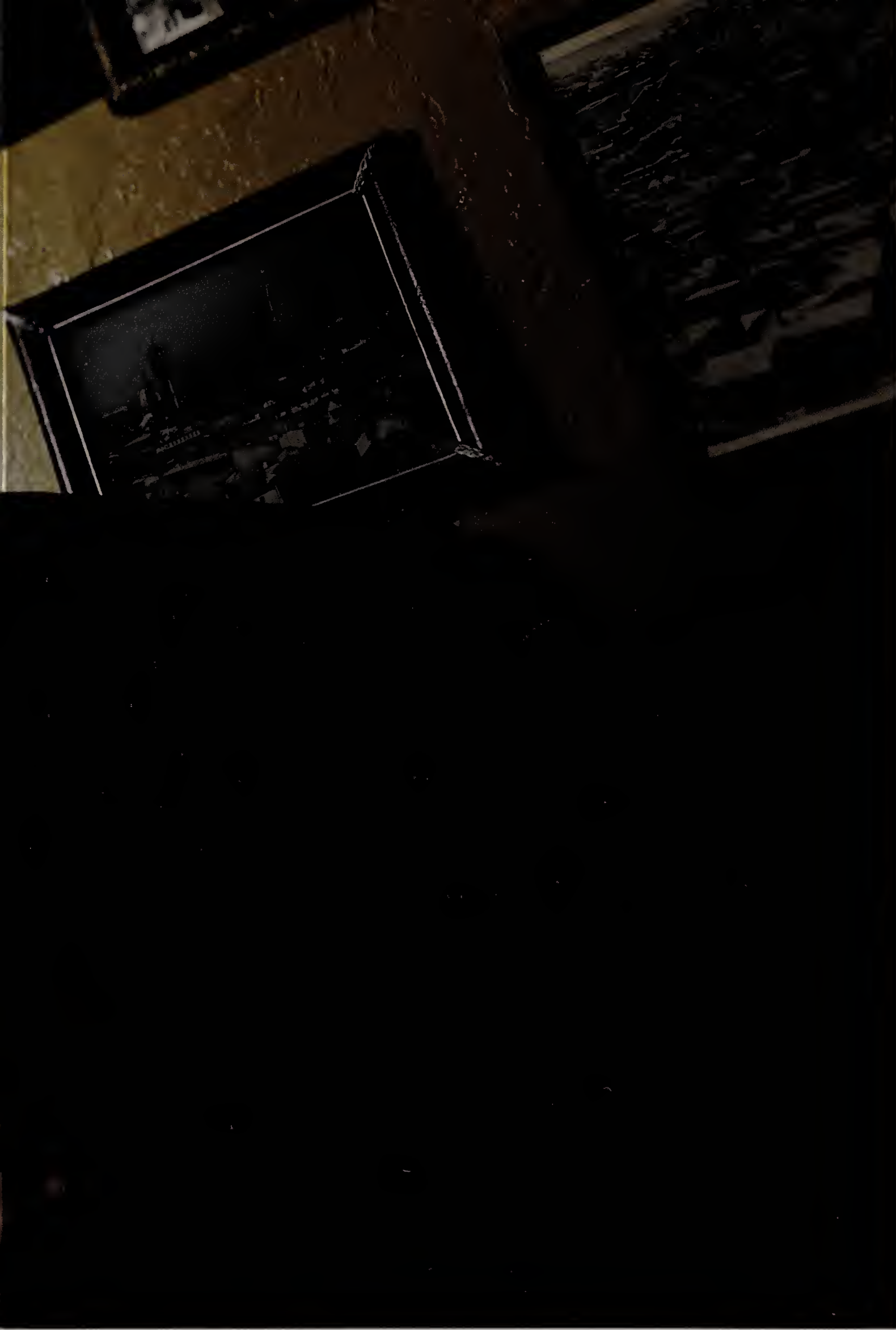




©2009 Quantum Corporation. All rights reserved. Quantum and the Quantum logo are trademarks of Quantum Corporation, registered in the U.S. and other countries.

For more information, call 1-800-624-5545 or visit [www.quantum.com](http://www.quantum.com)





Tax Returns



Plea Agreement



Witness Protection  
Dossier

If it's important to you, save it with us.

**Quantum**<sup>®</sup>



# Inside

## Columns

### E-Commerce Goes Global 52

**DAVENPORT** Connecting to the world, it seems, isn't as easy as you'd think.  
*By Tom Davenport*

### Do the Right Thing 56

**ASK THE EXPERT** Everything you need to know about chief ethics officers.

### Who's Next? 60

**TOTAL LEADERSHIP** Grooming your successor is critical both to the future of your organization and to your own career. *By Patricia Wallington*

### Dueling Expertise 64

**CAREER COUNSEL** Mark Polansky offers advice to aspiring CIOs and IT managers.

### Kevin Schmidt 208

**INTERVIEW** Schmidt educates CIOs on the hidden costs of incivility in the workplace. *By Debby Young*

## Opinion

### Too Close for Comfort 182

**DIFFERENCE ENGINE** Tailoring information may seem like the best weapon against data smog, but beware: Personalization has a dark side.  
*By Andrew L. Shapiro*

### "A" Is Not for Advertising 186

**REALITY BYTES** Advertising belongs in schools as much as weapons, drugs and graffiti. *By Megan Santosus*

### B2B: Back to Basics 190

**PLATFORM** Discover why reevaluating your resources can save you time and money. *By Kenneth Lengel*

### More H1-B Visas; Fewer Problems? 194

**SOUND OFF** Taking sides on critical issues. *By Martha Heller*

### IT's Dirty Secret 198

**FROM THE PUBLISHER** *By Gary Beach*



## In Every Issue

### From the Editor 18

*By Abbie Lundberg*

### InBox 22

Reader feedback

### Trendlines 32

#### BY THE NUMBERS

E-Business and Best Practices  
*Compiled by Susannah Patton* 36

**ON THE MOVE** Gone Fishin'  
*Compiled by Tom Field* 46

### Emerging Technology 170

Online tools promise to boost expert workers' efficiency. *By John Edwards*

#### REVISIT

Neural networks 174

#### PREDICTIONS

Multitenant broadband 178

#### UNDER DEVELOPMENT

Distributed computing 180

### Board of Influence 202

**ADVISERS** When we don't know, this is who we ask.

### Portfolio 204

### Index 206

*"Incivility in the workplace has been proven to reduce productivity."*

—KEVIN SCHMIDT, PRESIDENT OF ENVISIONWORKS, PAGE 208

give your B2B, B2C and B2E some ESP.



Everything you need before you even need it. That's what DataChannel really gives you. And it's not just about access to data. You can review, revise, delete, update – anywhere, anytime, on any device. Which means your business information is always current, and always within reach. So what's our secret? We've joined forces with ISOGEN to form the largest XML-based EIP solutions company in the world, employing some of the top XML developers anywhere. We've even carved out our own category, Business to Anyone (or B2A for those who can't stand to use complete words anymore). And that's just the beginning. To get a glimpse at all the future holds, go to our web site at [www.B2A.DataChannel.com](http://www.B2A.DataChannel.com). We have a strong feeling you'll like what you see.





## Internet Telephony

And what a world it's going to be, Carlos. To help us get there, we've developed Nortel Networks™ Succession™ Internet Telephony solutions. This evolutionary portfolio has been designed to the highest standards of quality by the company with proven reliability. It enables businesses to communicate and collaborate using high-performance networks and applications that leverage

What do **you** want the Internet to be?

"A road to a world with  
no borders, no boundaries,  
no flags, no countries.  
Where the heart is the only  
passport you carry."  
-Carlos Santana

the new, high-performance Internet. And creates avenues of opportunity –  
both social and economic – that know no boundaries. So come  
together, right now with Nortel Networks. And make the  
Internet whatever you want it to be. [nortelnetworks.com](http://nortelnetworks.com)

**NORTEL**  
**NETWORKS™**





Crowell

## Opinion Online

### Gayle Crowell on Internet Privacy

**ASK THE EXPERT** From Aug. 1 to Aug. 15, Gayle Crowell, director of the board of directors at Epiphany will be available to field your questions about how to walk the fine line between data collection and customer privacy.

[www.cio.com/CIO/expert](http://www.cio.com/CIO/expert)



Turk

### Douglas Turk on IT and the Entertainment Industry

**CIO RADIO** Douglas Turk, vice president of customer experience management practice at Inforte talks about how IT is changing showbiz.

[www.cio.com/radio](http://www.cio.com/radio)

### Who Do You Nominate for Federal CIO?

**SOUND OFF** If the U.S. government is ever going to haul itself into the 21st century, it needs a CIO. But overseeing the IT agendas of more than 50 agency CIOs is a tall order, and not everyone will be up for the job. Read Martha Heller's column for the full story and name your candidate.

[comment.cio.com](http://comment.cio.com)

## AND DON'T MISS...

### CIO Wanted

When you're ready to search for your dream job, our senior-level IT professional job board may have just what you need. [jobs.cio.com](http://jobs.cio.com)

### Leadership Research Center

Are you the leader you need to be? Visit our research center for articles, surveys, self-assessment tests and other tools that will help you fulfill your leadership goals. [www.cio.com/forums/leadership](http://www.cio.com/forums/leadership)



## NEW THIS >> MONTH

**ASK THE AUTHOR** Is ethical business decision making an oxymoron? Jeffrey Seglin, author of *The Good, the Bad, and Your Business: Choosing Right When Ethical Dilemmas Pull You Apart*, will be on call in CIO's Reading Room from Aug. 1 to Aug. 31 to answer your questions about how to act ethically and conduct business.

[www.cio.com/books](http://www.cio.com/books)

“Before we import thousands of foreigners, how about giving the graduating college students already in the United States a break?”

—a reader responding to the Sound Off, “Will More H1-B Visas Solve Your Staffing Problems?”  
[comment.cio.com](http://comment.cio.com)

# **A kit is fine for a model airplane. Not for a model e-business.**

| <b>E-business Kit</b> | <b>E-business Suite</b>            |
|-----------------------|------------------------------------|
| Microsoft             | Database<br><b>Oracle</b>          |
| Epiphany              | Marketing<br><b>Oracle</b>         |
| Siebel                | Sales<br><b>Oracle</b>             |
| Clarify               | Support<br><b>Oracle</b>           |
| IBM                   | Webstore<br><b>Oracle</b>          |
| Commerce One          | Procurement<br><b>Oracle</b>       |
| SAP                   | Manufacturing<br><b>Oracle</b>     |
| i2                    | Supply Chain Mgmt<br><b>Oracle</b> |
| SAP                   | Financials<br><b>Oracle</b>        |
| PeopleSoft            | Human Resources<br><b>Oracle</b>   |

A complete e-business  
suite from Oracle.

Or an e-business kit  
from lots of vendors.

The choice is yours.

**ORACLE®**  
SOFTWARE POWERS THE INTERNET™

[www.oracle.com](http://www.oracle.com)





THE PERFECT  
SERVER FOR A  
COMPANY  
WITH NO  
ROOM FOR  
ANOTHER SERVER.







Finally, a server that not only fits your company's needs, but also fits in your company. The New Dell™ PowerEdge™ 2450, with its ultrathin 2U form factor, allows up to 21 servers and 42 processors in a 42U Dell rack. But don't let its size fool you. Like Dell's complete line of servers, it packs a lot of power. With dual Intel® Pentium® III processor capability at up to 866MHz and 133MHz Front Side Bus, the PowerEdge 2450 will give your company all the computing power (and elbowroom) it needs.

## DELL™ SERVERS:

### DELL™ POWEREDGE™ 1300

#### Affordable Entry Level Server

- Intel® Pentium® III Processor at 600MHz (up to 800MHz)
- Dual Processor/RAID Capable
- 64MB 100MHz ECC SDRAM (up to 1GB)
- 9GB<sup>5</sup> 7200 RPM Ultra-2/LVD SCSI HD (up to 36GB<sup>5</sup>)
- 108GB Internal Storage Capacity
- NIC & Integrated SCSI Controllers; 40X Max CD-ROM
- Dell™ OpenManage™ Server Management Solutions
- 3-Yr NBD On-site Service<sup>3</sup>; 7x24 Phone Support

**\$1599**  **E-VALUE CODE 11192-290715**

BUSINESS LEASE: \$56/MO., 36 MOS.<sup>11</sup>

- Small Business Upgrade Bundle, add \$1877
- Second Intel® Pentium® III Processor at 600MHz, add \$449

### DELL™ POWEREDGE™ 2450

#### Ultra-Slim (2U) Rack-Optimized Server

- Intel® Pentium® III Processor at 667MHz (up to 866MHz)
- Dual Processor Capable
- 128MB 133MHz ECC SDRAM (up to 2GB)
- 9GB<sup>5</sup> 10K RPM Ultra3 SCSI HD (up to 36GB<sup>5</sup>)
- Up to 180GB Hot-swappable Internal Storage Capacity
- Integrated NIC/SCSI Controllers; 24X Max CD-ROM
- Dell™ OpenManage™ Server Management Solutions
- 3-Yr NBD On-site Service<sup>3</sup>; 7x24 Phone Support

**\$3579**  **E-VALUE CODE 11192-290735**

BUSINESS LEASE: \$125/MO., 36 MOS.<sup>11</sup>

- Single-channel RAID with 64MB Cache, add \$299
- NEW Microsoft® Windows® 2000<sup>33</sup> Server, add \$799

### DELL™ POWEREDGE™ 2450

#### Ultra-Slim (2U) Rack-Optimized Server

- Intel® Pentium® III Processor at 667MHz (up to 866MHz)
- Dual Processor Capable
- 128MB 133MHz ECC SDRAM (up to 2GB)
- 9GB<sup>5</sup> 10K RPM Ultra3 SCSI HD (up to 36GB<sup>5</sup>)
- Up to 180GB Hot-swappable Internal Storage Capacity
- Embedded Single-channel RAID with 64MB Cache
- Redundant Hot-swappable Power Supplies
- Integrated NIC/SCSI Controllers; 24X Max CD-ROM
- Dell™ OpenManage™ Server Management Solutions

**\$3999**  **E-VALUE CODE 11192-290739**

BUSINESS LEASE: \$140/MO., 36 MOS.<sup>11</sup>

- Red Hat® Linux™ 6.2, add \$149

### DELL™ POWEREDGE™ 4400

#### NEW—Departmental Server

- Intel® Pentium® III Xeon™ Processor at 733MHz (up to 866MHz)
- Dual Processor/RAID Capable
- 128MB 133MHz ECC SDRAM (up to 4GB)
- 9GB<sup>5</sup> 7200 RPM Ultra3 SCSI HD (up to 36GB<sup>5</sup>)
- Up to 360GB Hot-Swappable Internal Storage Capacity
- Integrated NIC/SCSI Controllers; 40X Max CD-ROM
- Dell™ OpenManage™ Server Management Solutions
- 1-Yr DirectLine® Network Operating System Support

**\$4799**  **E-VALUE CODE 11192-290747**

BUSINESS LEASE: \$168/MO., 36 MOS.<sup>11</sup>

- Redundant Hot-swappable Power Supplies, add \$250
- Dual-channel RAID with 64MB Cache, add \$899

**DELL  COM™**

GET EXACTLY WHAT YOUR BUSINESS IS LOOKING FOR.

**800.424.1370**

**WWW.DELL.COM**



**VALUE**

**USE THE POWER OF THE E-VALUE CODE.** Match our latest technology with our latest prices. Enter the E-VALUE code online or give it to your sales rep over the phone. [www.dell.com/evaluate](http://www.dell.com/evaluate)

Call: M-F 7a-9p | Sat 10a-6p | Sun 12p-5p CT | Canada: 800-839-0148 | Mexico: 001-877-269-3379 | GSA Contract #GS-35F-4076D

Prices, specifications, and availability may change without notice. Taxes and shipping charges extra, and vary. Cannot be combined with other offers or discounts. U.S. only. <sup>1</sup>For a copy of our Guarantees or Limited Warranties, write Dell USA L.P., Attn: Warranties, One Dell Way, Round Rock, Texas 78682. <sup>2</sup>Service may be provided by third party. Availability varies. Technician will be dispatched, if necessary, following phone-based troubleshooting. <sup>3</sup>For hard drives, GB means 1 billion bytes; accessible capacity varies with operating environment. <sup>4</sup>Business leasing arranged by Dell Financial Services L.P., an independent entity, to qualified customers. Lease payments based on 36-month 10% purchase option lease and do not include taxes, fees and shipping charges. Subject to credit approval and availability. Lease terms and pricing subject to change without notice. <sup>5</sup>Available on certain configurations. Contact your sales representative for details. Intel, the Intel Inside logo, and Pentium are registered trademarks and Intel SpeedStep, Pentium III Xeon, and Celeron are trademarks of Intel Corporation. MS, Microsoft, BackOffice, IntelliMouse, Windows NT, and Windows are registered trademarks of Microsoft Corporation. 3Com is a registered trademark and Fast EtherLink is a trademark of 3Com Corporation. HP and DeskJet are registered trademarks and DpenView is a trademark of Hewlett-Packard Corporation. Trinitron is a registered trademark of Sony Corporation. ©2000 Dell Computer Corporation. All rights reserved.



# From the Editor

lundberg@cio.com

## Whose Air Will You Breathe?

The brainiacs at MIT have a vision of human-centered computing called Oxygen ([www.oxygen.lcs.mit.edu](http://www.oxygen.lcs.mit.edu)). It's not a new vision—we saw an early version of it on *Star Trek* back in the '70s, with rooms that responded to *Enterprise* crew members' individual needs and devices that “sniffed” and interpreted the environment through a variety of sensors. What's new is that researchers at MIT's Laboratory for Computer Science (LCS) have created a comprehensive framework for making the vision a reality.

Working with a notably global mix of alliance partners (Acer, Delta Electronics, HP Labs, Nokia, NTT and Philips Research) and funded in large part by DARPA, the group intends to flip the existing human/computer relationship. “We will no longer bow at the altar of great machines,” declared Michael Dertouzos, director of the LCS, at a recent press conference. Instead, “we will bring machines into our lives to serve our needs.”

The lexicon of Oxygen includes the words *pervasive*, *ubiquitous*, *human-centered*, *automated*, *mobile*, *intelligent* and *adaptive*. The technologies include delivery devices (both handheld and embedded in your home, office and car); new, dynamic networking protocols; user software for speech, vision, automation, access and collaboration; and integration software to pull it all together.

With the technical prowess of the alliance partners, I don't



doubt their ability to develop the pieces. But there are two huge challenges standing in their way: reliability and ubiquity.

Oxygen depends on the technology working together all the time, anywhere, without human intervention. “It must never shut down or reboot—components may come and go in response to demands, errors and upgrades, but Oxygen as a whole must be available all the time.” I'm not holding my breath.

The ubiquity issue raises a more intriguing problem. To get the most out of the system, you'll want it in all parts of your life: your home, office, car, health club, grocery store. Yet other consortia are sure to develop competing systems. Will the Oxygen alliance and competing interests let their systems interoperate? If not, who will dictate the environment we inhabit?

In this information-enriched (and dependent) world, people will be loathe to leave their environment for an alien one in which they're at a distinct disadvantage. Just as millions of years ago fish developed gills and mammals lungs, perhaps this represents a new stage of evolution, and we'll adapt to the type of information environment we select (or are selected into).

Or maybe, given the growing interdependencies of corporate entities, this doesn't stand a chance without good standards. What do you think?

*Albi Lundberg*

PHOTO BY WEBB CHAPPELL





# ANTIDOTE FOUND FOR E-BUSINESS DISORDERS.

The prognosis for Medsite.com was for chronic growth spurred by an imminent, hyperactive IPO. So José Benitez, Jr., Medsite's manager of technical support, inquired about Subscription Computing™ from micronpc.com. After talking with one of our dedicated sales reps (the always-on-call Ryan Keen), they subscribed to a holistic solution that included 100 Millennia® desktop PCs and Micron™ notebooks for the three partners. They are also able

#### SUBSCRIPTION COMPUTING

*Get any two services when you buy any Millennia desktop featuring the Intel® Pentium® III processor and get 7% financing:*

- Web hosting*
- Connectivity*
- Uplifted on-site service*
- Priority Access technical support*
- System installation*
- Peripheral installation*
- System upgrade*
- Document transfer*
- System move*
- Micron University*

to add high-speed connectivity and Web hosting through our HostPro subsidiary. Result: Medsite.com can specialize in e-commerce while we administer the support. Should your e-business ever show any symptoms of affliction or malaise, our Subscription Computing could well be the cure. Think of us as the CPR for URLs.

**micronpc.com** Think beyond the box.™

SHOP ONLINE AT MICRONPC.COM/MED18 OR ORDER TOLL-FREE 1-800-707-2329

For government or education sales, call 1-888-209-8041. GSA Contract #: GS-35F-4317D

©2000 Micron Electronics, Inc. All rights reserved. Micron Electronics, Inc. is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. Seller's return policy does not include return freight and original shipping/handling charges, and all return and warranty periods begin from the date a product is shipped, not when it arrived. A restocking fee may be charged upon the return of a product. All sales are controlled by seller's current terms and conditions of sale, which are available on seller's website or from its sales representatives. On-site service is provided at sole discretion of Micron Computer Services, Inc. A diagnostic determination for on-site service must be made by a Micron service technician prior to the provision of on-site service. On-site service is provided by a third-party service provider under a separate service contract between you and the service provider. Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. Product names of micronpc.com products are trademarks or registered trademarks of Micron Electronics, Inc. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies.



# HOW FAST COULD YOU GO IF RAN E-COMMERCE OPERATIONS

HOW RAPIDLY COULD YOU GROW IF INTEGRATION DIDN'T DRAG YOU DOWN

HOW QUICKLY COULD YOU GET TO MARKET IF IMPLEMENTATION DIDN'T

HOW SWIFTLY COULD YOU PROSPER IF LOGISTICS DIDN'T STEAL ALL YOUR PROFITS

**HOW FAST COULD YOU LEAVE EVERYONE ELSE BEHIND?**

What if you could fast-forward your e-commerce initiative? Electron Economy,<sup>™</sup> with complete consulting, technology and management services, speeds the planning and building of back-end operations. And once up, the Internet TONE,<sup>™</sup> our Internet Transaction Operations Network, makes it fly. Open and extensible, it enables you to integrate on impulse, leverage assets at will and transport data and product on demand. Download the whitepaper at [www.electroneconomy.com/4](http://www.electroneconomy.com/4)



# SOMEONE HOLDING YOU BACK?

DOWN?  
HOLD YOU BACK?  
YOUR TIME?



Saving companies from the chaos



electron economy



# InBox

Reader Feedback

## LESS HYPE, MORE REALISM

I just read Tom Davenport's column "Long Live ERP" [*CIO*, March 1, 2000] and I couldn't agree with him more.

I have worked in the world of MRP, MRP II and ERP systems for 16 years and have yet to see anything related to the Internet that enables a manufacturer to cost its product, plan raw material requirements, schedule production and manage inventory.

In a recent article in another trade publication, an Internet hotshot said the downturn in revenues for the ERP vendors was a result of the Internet and e-commerce. Unfortunately I read that article too late or I would have penned a letter to the editor. Of all the baloney I've read, that was the piece de résistance.

I'm finding selection and implementation of ERP systems very quiet at the moment but more because there were so many legacy systems replaced for Y2K compliance than because of the Internet. In fact, many manufacturing companies are more concerned with the traditional problems of manufacturing efficiency, market development and so on than they are with e-commerce.

So it was nice to read your article. It's a pity more journalists don't have the savvy to analyze the topics they write so profusely about—we might see more realism and less hype.

Ken Galbraith • Managing Director • INL Consulting Group  
Camberwell, Victoria, Australia • ken@inlconsulting.com.au

## THOUGHTS ON ERP TRAINING

Your article ["ERP Training Stinks," *CIO*, June 1, 2000] helps shed some light on the real reasons ERP implementations do not reach their potential benefits. As a past implementation project manager and consultant, I've always thought that the cookie-cutter approach to both education and training perpetuates this problem. Education is almost always ignored and training is usually customized depending on the modules being implemented.

The approach for implementing within an organization with no previous formal business system is going to be different

from the approach you would take with a company that has some, or full, business systems. Not only do you have to tailor your programs for the individuals (individuals learn in different ways and at various speeds), you have to customize your programs to bring the organization (operating areas and individuals) up to speed on what

might be common business practices that are built into the software being implemented.

Your team must help the organization and individuals make the leap between what was and what should be. This is why education is so critical. It is easy to teach people to input data into the system, but they may not know that if they fail to enter data or enter incorrect data, it will adversely effect everyone in the supply chain.

Brian Dreckshage  
Supply Chain Specialist

InSite Logistics

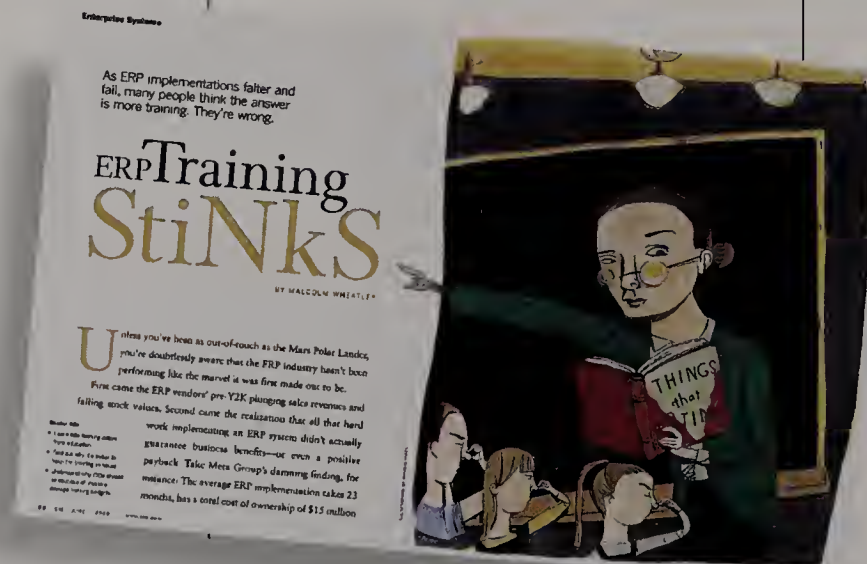
St. Louis

bdrecks@insitelogistics.com

When I worked as a trainer and consultant, I always told my clients that there are four stages to implementing any system:

1. "Oh, boy!" (We're getting this great new system that will do all these neat things.)
2. "Oh, sh#t!" (I had no idea we would have to do all this to get the system to do all those neat things!)
3. "Oh, well." (I guess this system is here to stay. I had better learn to deal with it somehow.)
4. "How did we ever get along without it?" (Remember how bad it was before the new system?)

Middle managers caught up in the first stage will begin to exercise their ship-it-anyway or spontaneous self-empowerment skills. They also do something else: They report to upper management that the system is fail-





WHAT HAPPENED WHEN WE INVITED **THE WEB'S** TOP CAR DEALER TO  
**KICK OUR TIRES?**

They took us for a test drive. And liked our performance so much they not only bought our hardware, but our e-business solutions as well. You see, Autobytel.com—the global



leader in automotive e-commerce and services—was looking for help in maintaining its lead and accelerating its growth.

Not surprisingly, the people who came up with the idea of selling cars via the Internet came to another group of e-business innovators: the people at Unisys.

We're helping Autobytel.com with everything from **Unisys e-@ction Enterprise Servers** to building Web sites to handle their global expansion. And we'll be there to see the job through. But, then, with Unisys that's always the deal. [www.unisys.com](http://www.unisys.com)



**UNISYS**

We eat, sleep and drink this stuff.



ing miserably, and they now have to do all sorts of extra work just to get the job done.

Shortly after this report, the consultant hears the cries from the front line that they can't get things to work right in the new system. The consultant does some digging and determines that the directives were given by the middle manager to "ship it anyway." The consultant attempts to explain to the middle manager why that was not a good

down the dangerous path toward failure with guaranteed arrival.

- Support the consultant and issue the direct order. This brings about a fighting chance for success—at least until the next moment of spontaneous self-empowerment. Then the cycle starts over again.

This will happen several times from several areas. Over time, the message becomes clear to the ranks: Educate yourself on the system and use it cor-

The underlying element to all of this was Y2K. None of the existing systems were compliant.

Chuck Fieger

*Manager for Information Engineering*

*Chiquita Brands International*

*Cincinnati*

*cfieger@chiquita.com*

## People with low self-esteem will lie about who they are and what they do in order to attract others. So much for the digital revolution.

decision but often runs into a buzz saw. The middle manager tells the consultant how worthless and painful his (note the transfer of ownership) system is.

The consultant, realizing the dangerous path the middle manager is beginning to travel, meets with upper management and explains the problem. Then he asks upper management to issue a direct order to cease all activities that are not consistent with the proper procedures (usually in a tactful way, of course).

Based on my experiences, this is the crucial moment of truth that will determine the ultimate fate of the project. Upper management can respond in one of four ways:

- Do nothing. This sends a message to middle management that it's OK to continue down the dangerous path toward failure.
- Compromise. This results in a mixed and confusing message to middle management and the consultant about what to do and what to expect—the same path toward failure.
- Decide in favor of the middle manager. This leads to the continuation

rectly. Using the system is part of getting your job done.

Congratulations. You just made it to the "Oh, well" stage. Education that will really sink in and take hold can now begin.

John Schneider

*Director of IT*

*Radix Communications*

*St. Joseph, Mich.*

*john.schneider@radixcom.net*

Your article on ERP training has special meaning to me. My company is still training people on the ERP system we installed April 5, 1999. The training, like other things, came at the last minute and concentrated on which buttons to push instead of which business task you were trying to accomplish. We used mostly outside, third-party trainers.

A second issue we had was that we were combining four companies (and thus four different systems) into one with this implementation. We had four distinct business processes that no one was willing to give up. Hindsight is 20/20 and there are many things that we would do differently.

## RESPECT WILL KEEP US TOGETHER

After reading "The Data Game" in the June 1, 2000, issue, I looked back at the cover to make sure I wasn't reading the April Fool's issue. Is Ed White for real?

How abhorrent a concept: People should base intimate relationships on common superficial data points. My wife and I have been happily married for five years. We have two children and are expecting a third in August. We have almost nothing in common: I'm a fan of avant-garde and experimental film; my wife prefers romances. I listen to classical music; my wife likes '70s pop. I love to windsurf and mountain bike; my wife power-walks the malls of New Jersey. So what keeps us together? Our mutual respect for each other's uniqueness and a strong initial friendship that blossomed into love.

Ed White's concept is especially flawed in the same way that romance chat room participation fosters disappointment: People with low self-esteem will lie about who they are and what they do in order to attract others. So much for the digital revolution.

David DeLuca

*Director, Business Development*

*Transys Technologies*

*Princeton, N.J.*

*david.deluca@transys.net*

## WHAT DO YOU THINK?

Send your thoughts and feedback to [letters@cio.com](mailto:letters@cio.com). Letters may be edited for length or clarity.



**HERE  
HACKER,  
HACKER,  
HACKER.**



Network ICE, the company that brought you BlackICE™, continues to pioneer enterprise-wide protection from hackers and malicious employees throughout today's borderless corporate network. Whether your notebooks, desktops and servers are remote, inside the firewall, or residing on a partner's extranet, Network ICE protects every system, everywhere, from a single manager.

Using revolutionary anti-hacker technology, Network ICE products act like an Internet bodyguard; inspecting every packet, blocking those that are hostile, allowing harmless data to pass, yet always ready to step in and intercept an attack. Even from someone you trust. Network ICE products complement existing firewalls and VPNs. Visit [www.networkice.com](http://www.networkice.com) to learn more about our enterprise solutions, and how to stop hackers cold...



Network  
I • C • E

**[www.networkice.com](http://www.networkice.com)**

**Stop Hackers Cold**







THE CONSTANT AND *rapid* CHANGES  
IN TECHNOLOGY HAVE LEFT ROOM  
FOR ONLY TWO KINDS OF E-BUSINESSES:  
THE QUICK AND THE DEAD.

It's no longer business as usual. For you, or your competition.  
Which is why nearly all the Fortune 500® rely on us to survive—  
and thrive—in today's ever-changing, unpredictable environment.

We are BMC Software. The world's leading provider of systems  
management solutions. Software that keeps your business-critical  
applications up and running around the clock. We offer the  
fastest implementation of the most comprehensive e-business  
management systems. And our exclusive OnSite™ program is your  
seal of assurance that your e-business will be on-line, all the time.

For more information, visit  
us at [www.bmc.com](http://www.bmc.com). We'll be  
there. We're always there.



Assuring Business Availability™







# The Magazine for Information Executives

**President & CEO** Joseph L. Levy

**Publisher** Gary J. Beach

**Editorial Director** Lew McCreary

## EDITORIAL

**Editor in Chief** Abbie Lundberg

**Senior Executive Editor** Richard Pastore

**Managing Editor** David Rosenbaum

**Managing Editor, Production** Cheryl R. Asselin

**Executive Editors** Christopher Koch (Investigations), Derek Slater

**Technology Editor** Chris Lindquist

**Senior Editors** Cheryl Bentsen, Mindy Blodgett (Special Projects), Tom Field, Michael Goldberg, Carol Hildebrand, Megan Santosus (Opinion)

**Features Editors** Sandy Kendall, Lafe Low, Katherine Noyes, Sara Shay

**Associate Editor** Tom Wailgum

**Senior Writers** Eric Berkman, Meg Mitchell, Susannah Patton, Lee Pender, Elana Varon

**Staff Writers** Stewart Deck, Meridith Levinson, Sarah D. Scalet, Ben Worthen

**Copy Chief** Steve King

**Copy Editors** Kelli Botta (Associate), Kathleen S. Carr, Emily S. Henderson

**Research Manager** Lynne Z. Rigolini

**Senior Researcher** Carol Zarrow

**Editorial Assistants** Lauren Capotosto, Joe Sullivan, Chloe Taylor, Stephanie Viscasillas

**Contributing Editors** Elaine Cummings, Daintry Duffy

**Contributors** Heather Baukney, John Edwards, Fred Hapgood, Thom Hopkins, Susan Isenstein, Kenneth Lengel, Rebecca Lynch, Tracy Mayor, Mark Polansky, Brian Robinson, Andrew L. Shapiro, Matt Villano, Patricia Wallington, Malcolm Wheatley, Debby Young

**Editorial Operations Coordinator** Karen J. Zirpola

**Editorial Intern** Karen Witham Lynch

## DESIGN

**Executive Director, Art and Design** Mary Lester

**Art Director** Lisa Munroe

**Associate Art Director** Hana Barker

**Graphic Designers** Susan W. Gilday, Andrea Healy, Robin B. Macleod, Terri Mitchell, Maria Cristina Villa

**Associate Graphic Designers** Kaajal S. Asher, Chandra Tallman

**Contributing Designers** Owen Edwards, Leslie Anne Feagley, John Skurchak

## WEBSITE

**Senior VP/General Manager, Online** Tim Horgan

**Web Editorial Director** Art Jahnke

**Senior Web Editor** Martha Heller

**Web Writers** Danielle Dunn, Emelie Rutherford

**Web Operations Manager** Dagmar Eiben

**Senior Web Developer** Ellen Morey

**Web Research Editor** Kathleen Kotwica

**Web Producer** Holly Cuny

**Vendor Program Manager** Andy Burrell

**Assoc. Web Developer** Shannon Macdonald

**Web Engineer** Kelly Kimball

**Web Interns** Diane Chen, Julie Lavallee, Alexa Storey Mukherju, Karalee Serra

## CIRCULATION

**Senior VP/Circulation** Carol A. Spach

**Circulation Manager** Susan Woodworth

**Subscription Svcs. Manager** Denise Perreault

**Subscription Svcs. Supervisor** Tina Pescaro

**Circulation Assistant** Lisa Desmarais

## PRODUCTION

**Director of Production** Resa Altsher

**Production Associate** Lee Tuttle

## EXECUTIVE PROGRAMS

**Executive VP** Lynda Rosenthal

**Executive Assistant** Susan Weidman

**Director, Marketing Services** Shellie Rapson James

**Manager, Program Operations** Brian Fuce

**Manager, Ancillary Products** Bill Kerber

**Manager, Procurement/Tech. Planning** Cynthia Laird

**Senior Program Development Manager** Michele Zarella

**Manager, Program Development** Sherry Keyles

**Manager, Client Services** Jeremy E. Draper

**Administrator, Program Planning & Finance** Sandra J. Hughey

**Program Applications Specialist** Heather Beaton

**Associate Program Applications Specialist** Leah Silver

**Program Marketing Specialist** Karen Peabody

**Assoc. Program Marketing Specialist** Deanna Burke

**Operations Coordinator** Michael Barbato

**Fulfillment Services Coordinator** Andrea Harney

**Manager, Event Planning** Amy Sanderson

**Event Planning Specialist** Rachel Sherman

## MARKETING

**Executive VP/Marketing** Cathy O'Leary Hayes

**VP/News and Information** Susan Watson

**Media Relations Manager** Karen Fogerty

**News and Information Specialist** Julie Hanson

**Research Director** Bridget Cammarata

**Senior Marketing Research Analyst** Carolyn Johnson

**Marketing Research Analyst** Denise Kane

**Marketing Comm. Director** Marcy L. Dill

**Marketing Comm. Manager** Nicole Glinski Curtin

**Sr. MarCom Development Specialist** Kari Noah

**Marketing Comm. Specialist** Dot Caspersen

**Marketing Comm. Intern** Sarah Crowley

## ADMINISTRATION

**Executive VP/Operations** Walter Manninen

**Assistant to the Publisher** Diane Martin

**Financial Manager** Margarita Chiango

**Jr. Financial Analyst** Hilary Kushinsky

**Billing Administrator** Joyce Gillis

**Facilities Specialist** John Kelley

**Office Services Assistant** Mary E. Wooldridge

## INFORMATION SYSTEMS

**VP/CIO** David Woodall

**Manager, Network Services** James C. Burgoyne

**User Services Manager** Ron Bettencourt

**User Services Specialist** Michael Fahlsing

**System Administrator** Robert Reagan

**IS Intern** Ben Gonzales

## How to Reach Us

**E-mail** [letters@cio.com](mailto:letters@cio.com)

**Phone** 508 872-0080

**Fax** 508 879-7784

**Address** CIO Magazine, CXO Media Inc.,  
492 Old Connecticut Path, P.O. Box 9208,  
Framingham, MA 01701-9208

**Website** [www.cio.com](http://www.cio.com)

**Subscriber Services** 800 788-4605

**Fax** 508 879-7899

**E-mail** [denisep@cio.com](mailto:denisep@cio.com)

**Reprints** Reprints are available by calling RMS  
at 717 399-1900, ext. 131, or via e-mail at  
[jeffm@rmsreprints.com](mailto:jeffm@rmsreprints.com).



**President & CEO** Kelly Conlin

**Board Chairman** Patrick J. McGovern



© CXO Media Inc.

# We Deliver

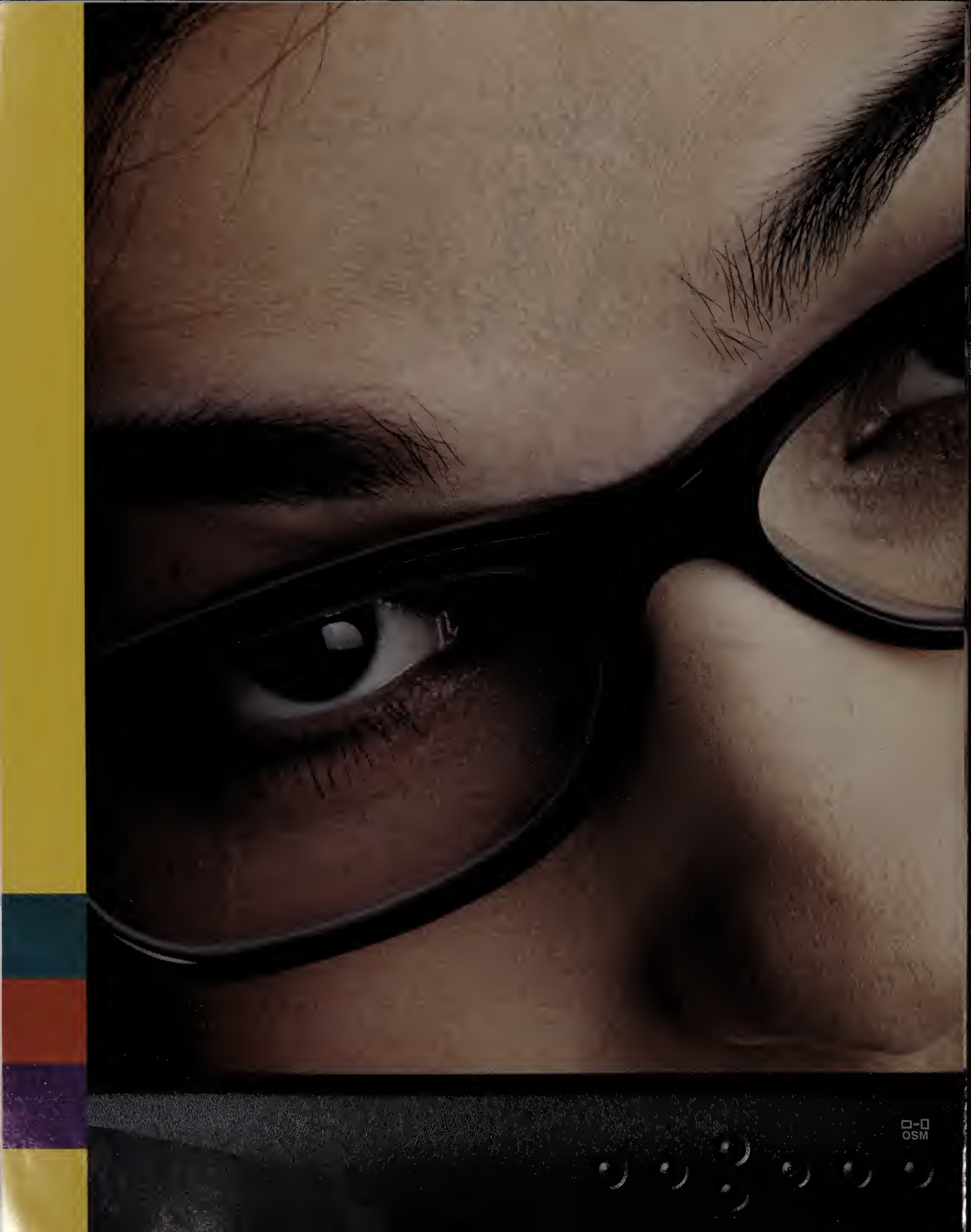
The RAS in .com

Reliability, Availability, Scalability



  
**AMDAHL®**  
[www.amdahl.com](http://www.amdahl.com)







I'm there as you  
pour yourself into proposals.

Collaborate with partners.  
Compete across time zones.

I am there when you  
read between the lines of a contract.

Brainstorm. Innovate.

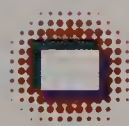
I'm your monitor.  
I help you see more clearly.  
And give you new ways of  
exploring your work.

You look.

But do you really see?

That's why the two leaders in electronic visual display technology have come together: to make monitors that expand your vision. That help you see. See more. See anything. See everything all at once. Monitors that take you anywhere. That help you do more than you ever imagined. With our combined R&D, engineering and manufacturing power, NEC's LCD leadership and Mitsubishi's patented flat-screen CRT technology, the possibilities are endless. Let's begin.

[www.necmitsubishi.com](http://www.necmitsubishi.com)



**NEC/MITSUBISHI**  
NEC-MITSUBISHI ELECTRONICS DISPLAY

*SEE MORE.*

**NEC**



# trendlines

the **NEW** the **HOT** the **UNEXPECTED**

Edited by Katherine Noyes

## NONPROFITS

### On the Web and a Prayer

**E-COMMERCE ISN'T JUST** for old-line industries looking to offload excess inventory or three-person startups hoping to make it big. Some nonprofits are entering the fray, looking to raise funds more efficiently via the Internet.

For the sisters at Mount St. Mary's Abbey in Wrentham, Mass., a website offers the opportunity to maintain a steady income year-round. "We are self-sustaining, so we want to have an evenly based income spread over 12 months," says Sister Pamela Clinton.

For 44 years, the abbey has been making and selling candy, primarily by mail order but also in a store at the abbey. Like many IT departments, however, the abbey is experiencing a labor shortage of sorts. "Fewer people have entered the vocation, so we have a smaller labor force," says Sister Pamela. With fewer and fewer hands to help, Mount St. Mary's couldn't afford to keep up the candy-selling operation year-round. So, it focused on the holiday-laden stretch from September through December.

But last September, candy operations went digital with the



For the sisters at Mount St. Mary's Abbey a website offers year-round income.

help of Silver Sword Solutions of Cambridge, Mass. The result? Enough staff time was freed up from selling in the abbey's store to make it possible to keep the candy coming all year. Currently, five sisters process orders **Continued on Page 34**

## BIOMETRICS

### Keeping Kids Safe



**WHEN FORMER** Microsoft employees Martin and Bronwyn Calsyn decided to open up their own child-care

center in Bellevue, Wash., they made it their mission to install state-of-the-art technology to ensure that the right children go home with the right people.

The nonprofit Northwest Child Development Center (NWCDC) uses a fingerprint recognition system from Digital Persona. When a family registers with the day-care center, members touch their fingers to the "U.are.U" scanning

device, which creates a mathematical template of their fingerprints. To enter the building, they simply place any one of their fingers on Digital Persona's fingerprint sensor, and voilà, they're admitted. If the Windows-based system doesn't recognize a set of mitts, the individual can't get in.

For more on Digital Persona, visit [www.digitalpersona.com](http://www.digitalpersona.com).





Somebody's going to profit  
from all this e-commerce data.  
Will it be you?

Boom! Just when you thought that your company's information systems couldn't get any more complicated, along comes the e-commerce revolution. And, with it, an explosion of new data about online customers and supply chains. As the world leader in data warehousing and e-Intelligence, SAS transforms this data into the knowledge you need. To optimize customer and supplier relationships. To reveal unseen opportunities for cross-selling and enhancing customer loyalty. Ultimately, making your e-commerce operation an e-profit machine. For more details on e-Intelligence solutions from SAS, call 1-800-727-0025 or stop by [www.sas.com](http://www.sas.com).

*The Power to Know™*



SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. © 2000 SAS Institute Inc. 35605US 0600



# On the Web and a Prayer

Continued from Page 32

while 10 others make and box fudge, milk chocolate and other assorted goodies.

Sales for the first three months of operation totaled 250 orders, a nice surprise for Sister Pamela, who anticipated only 100 orders, since the abbey has yet to advertise. Although it's too early to tell whether Internet sales will generate serious revenues for the abbey, Sister Pamela is hopeful, especially since many candy orders are followed up by e-mails seeking prayers or spiritual guidance.

Visit [www.trappistinecandy.com](http://www.trappistinecandy.com).

—Megan Santosus

## PHILANTHROPY

# Payback Time

## PICTURE THE QUINTESSENTIAL

philanthropist. Do you see a portly, gray-haired, mortality-contemplating soul?

Erase that—today's givers are breaking the mold. Case in point: Georgia

Tech alumnus Christopher Klaus recently donated \$15 million to

his alma mater to help the Atlanta school build a new

information technology complex. In addition to ranking among the largest

gifts ever made to the university, the donation signals the advent of a new generation of philanthropists: Klaus is just 26.

Of course, Klaus didn't earn that kind of dough working dining hall shifts between all-nighters. He is the founder and chief technology officer of Internet Security Systems (ISS), which counts 5,500 customers worldwide. Klaus left Georgia Tech to start ISS just shy of receiving his degree. Just think how much money he could have made if he had finished.



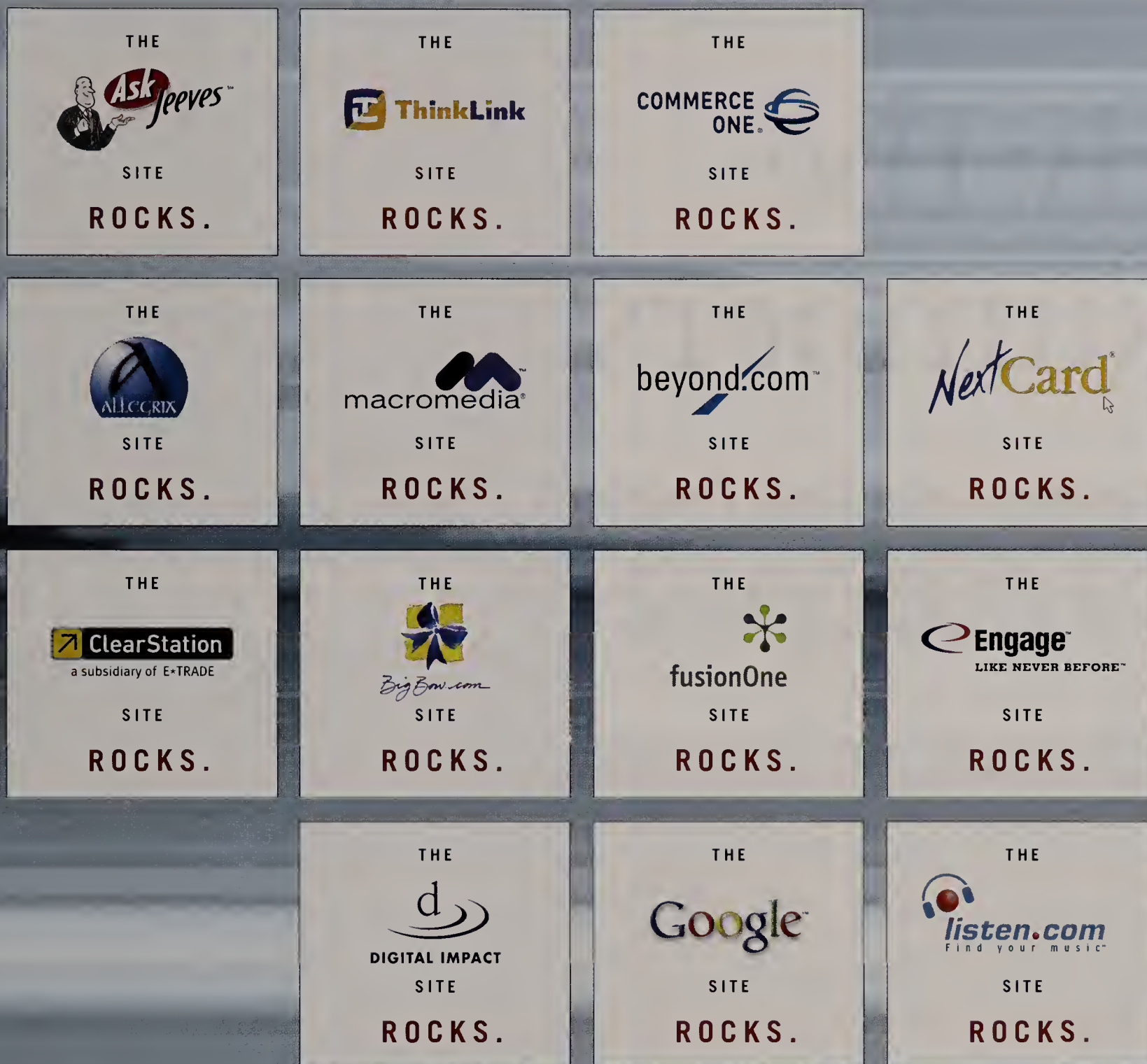
# Maynard

BY DARRIN BELL AND THERON HEIR



ILLUSTRATION BY DOUG ROSS





## DOES YOURS?

These companies have two things in common: They all depend upon a reliable 24/7 Internet presence, and they all depend on siterock.

Siterock is the leading provider of remote e-commerce site management services. Our Reliability Operation Centers are staffed by skilled IT professionals around the clock and around the world. These ROCs monitor and optimize the availability and performance of your e-business systems, third-party dependent applications, and network providers.

Siterock delivers objective and actionable metrics that give you what you need most — reliability, visibility, control, and peace of mind — at a fraction of the cost of in-house solutions.

Call us today at 1.877.506.ROCK or visit [www.siterock.com](http://www.siterock.com)





# By the Numbers

Compiled by  
Susannah  
Patton

## E-Business and Best Practices

**E-BUSINESS IS MUCH** more than buying and selling on the Internet; it also involves supply chain management, customer relationship management and enterprise resource planning. The Cambridge, Mass.-based Benchmarking Partners, in a study sponsored by IBM, interviewed executives at 16 leading high-tech companies to identify best practices in their industry, which is considered at the forefront of the e-business revolution.

### SAMPLE BENEFITS FROM E-BUSINESS BEST PRACTICES

#### Cross-Enterprise Order-to-Cash (a system manufacturer)

More than 75 percent of orders received electronically  
95 percent of orders flow without human intervention  
Order error rate reduced from 20 percent to 2 percent  
Reduced order cycle time from 6-8 weeks to 1-3 weeks

#### Virtual Factory (a device manufacturer)

Reduced manufacturing cycle time from 105 days to 55 days  
Saved \$2 million from reduced inventory  
Reduced carrying costs by \$400,000  
Reduced confirmation of availability from six days to a few hours

## Best Practices for IT

**1. Integrate at home.** Smooth ties with your business partners require internal systems that work well together. "Having something like an ERP system is important," says Debra Hofman, a partner at Benchmarking Partners who oversaw the study. If you have disparate systems, it will be more difficult to integrate them with suppliers and distributors, Hofman adds. A company with disconnected internal systems will become a supply chain bottleneck.

**2. Shoot for real-time interaction.** Customers and suppliers should be able to access current inventory information on the Web so that they can work together seamlessly. One company interviewed for the study has fully integrated its systems with a business partner's factory in Asia, so the two companies can operate as if they are one, Hofman says. External partners' systems should be integrated as though they were internal units.

**3. Focus on core competencies.** High-tech companies are increasingly outsourcing activities that aren't part of their central mission to trading partners. For example, Hofman notes that the Ciscos and Dells of the world no longer do all their manufacturing in-house. "Having Internet-based interaction enables companies to do this," she says.

### FRAMEWORK FOR GAUGING E-BUSINESS MATURITY

Understanding the e-business maturity level of your industry provides a basis for developing an e-business strategy and architecture. The high-tech industry sets the high bar for e-business maturity because high-tech companies have complex products with short shelf lives. Meanwhile, many utilities haven't yet embraced e-business because they are wrestling with industry "disruptors" such as deregulation, according to Benchmarking Partners.

SOURCE: BENCHMARKING PARTNERS  
AND IBM CORP.

|                                | Product Complexity | Product Life* | Customer Pressure | Virtualization | Transformation Receptivity | X-Enterprise Processes | Standards | Disruptors | Overall |
|--------------------------------|--------------------|---------------|-------------------|----------------|----------------------------|------------------------|-----------|------------|---------|
| High-Tech                      | ●                  | ●             | ●                 | ●              | ●                          | ●                      | ●         | ●          | ●       |
| Aerospace & Defense            | ●                  | ○             | ●                 | ●              | ○                          | ●                      | ●         | ○          | ●       |
| Banking, Finance, & Securities | ●                  | ●             | ●                 | ●              | ●                          | ●                      | ●         | ●          | ●       |
| Chemicals & Petroleum          | ●                  | ●             | ●                 | ●              | ●                          | ●                      | ●         | ●          | ●       |
| Health Care                    | ●                  | ●             | ●                 | ●              | ○                          | ●                      | ●         | ●          | ●       |
| Retail                         | ●                  | ●             | ●                 | ●              | ●                          | ●                      | ●         | ●          | ●       |
| Utility & Energy Service       | ●                  | ○             | ●                 | ●              | ●                          | ●                      | ●         | ●          | ●       |

○ Low

◐ Medium

● High

\* For product life, high = short low = long

Suggest future topics to [numbers@cio.com](mailto:numbers@cio.com).

# surviving. succeeding.

**We've helped build over 100 online businesses  
and left them money to run their business.**

We're Pandesic, the partner you need to succeed in the new economy. We've already enabled businesses like adidas, Express.com, and The Children's Place to get online—and stay there. Along with the speed to get your company online and selling fast, we provide the scalability and proven technology so you can build a profitable business. Before you choose a partner, know the difference.

**Know Better.**









Who Helps

# Williams-Sonoma

Keep Its Most Discerning Customers  
Coming Back For Seconds?

## Kana.

It's all about empowering customers, partners and the enterprise to interact in the most cost-effective and efficient ways possible. Kana is changing the way leading companies like Williams-Sonoma build long-lasting relationships with their customers and partners in one complete e-business solution.

Kana provides comprehensive communication and e-business applications designed to engage, acquire and grow customers at every stage of the lifecycle. By integrating marketing, sales and service into a single Web-based platform, Kana gives customers, partners and the enterprise a global view of all interactions across multiple channels.

Offering unsurpassed service and support, systems integration and a cost-effective hosted option, Kana has the solution to make your e-business succeed.

So if you're searching for the perfect recipe — one that'll increase revenue, reduce operating costs and build greater customer loyalty, follow the lead of Williams-Sonoma and hundreds of other successful Internet-based and Global 2000 e-businesses.

For a FREE Kana demo, visit our Web site today.

[www.kana.com/exec](http://www.kana.com/exec)





E - C O M M E R C E

## Badge of E-Honor

**IF THE INTERNET** is the Wild West of contemporary commerce, then those who monitor the policies, practices and quality assurance of e-business sites are the modern-day sheriffs.

Here's where some of them are getting their badges. Clicksure, the Oxford, England-based publisher of the Clicksure standard for e-commerce and provider of certification services to e-business sites, has launched a series of training courses for e-commerce website quality assessors. The courses, which are currently offered free of charge, are designed for IT and Web professionals who want to become recognized as Clicksure assessors as well as for those who simply have responsibility for e-commerce within their organizations.

First published in June 1999, the Clicksure standard is an independent global e-commerce verification program that addresses issues such as privacy, security, reliability and website content. To obtain certification, an e-business must undergo rigorous testing by Clicksure-trained assessors.

The course curriculum, codeveloped by Oxford University and Clicksure, covers the eight principles of the Clicksure standard, technology issues, security, privacy, transaction processing and website navigation. Since the first course was held at Oxford last February there have been sessions in Washington, D.C., and Berlin Germany. Additional courses will run on both the East and West Coasts of the United States.

For more information, visit [www.clicksure.com](http://www.clicksure.com).



C O L L A B O R A T I V E C O M P U T I N G

## The Search for E.T.

**EXACTLY TWO YEARS AGO**, *CIO* reported on the SETI@home project, through which a team led by a group of current and former academics at the University of California at Berkeley is pursuing the search for extraterrestrial intelligence. (See "Trendlines," *CIO*, Aug. 1, 1998.) The project uses volunteers' Internet-connected computers (either by running in background mode or as a screen saver) to analyze 350K-byte chunks of radio-signal data from the world's largest and most sensitive radio telescope, at Arecibo in Puerto Rico, to search for signs of intelligent life. *CIO* recently checked in with the project leaders to see how things are going.

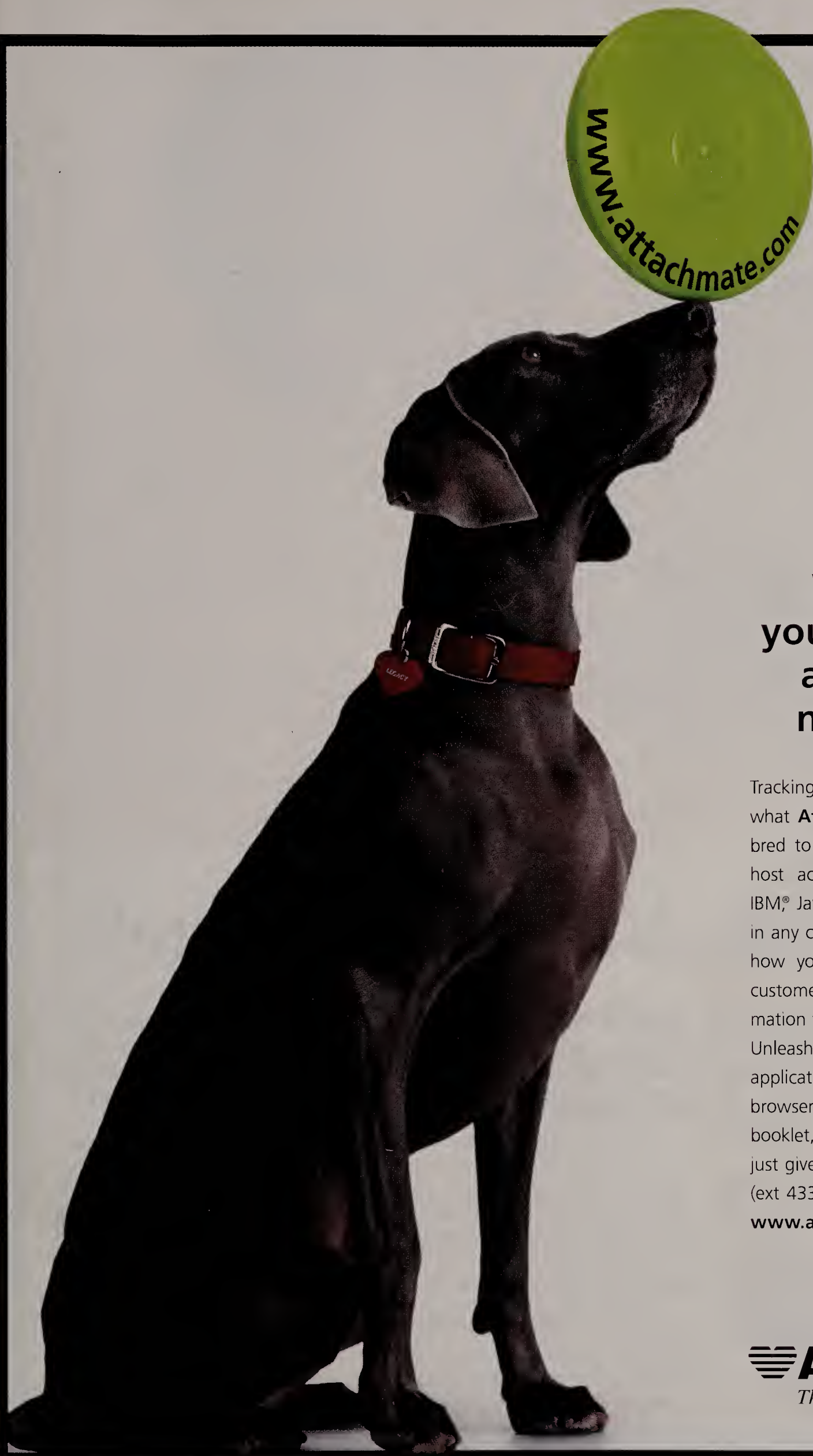
That wasn't easy, because those involved have been busy—really busy. On

May 15, almost a year to the day after its official launch, the project welcomed its 2-millionth user, and more than 122 million completed analyses had been received. Although around half of the project's volunteers are in the United States, this represents the efforts of computers in some 226 countries around the world, equating to some 279,145 years of CPU time, or 2.435249 e+20 floating-point operations.

Needless to say, Berkeley-based Project Director David Anderson is delighted. "SETI@home is just the beginning," he adds. "In the future, there could be 20 or 30 projects competing for your computer cycles—almost every area of science has research that involves simulation on a large scale." —Malcolm Wheatley

"MOST PEOPLE STILL FIND JOBS THROUGH FRIENDS, RELATIVES AND OTHER ACQUAINTANCES, DESPITE THE BELIEF OF SOME THAT THE INTERNET IS FUNDAMENTALLY CHANGING THE PROCESS."

—from *The Harvard Business School Guide to Finding Your Next Job*, by Robert S. Gardella



## Who says you can't teach an old dog new tricks?

Tracking down legacy information is what **Attachmate® e-Vantage™** was bred to do. It's the only web-based host access solution that supports IBM®, Java™ and Microsoft® standards in any combination you prefer. That's how your employees, partners and customers can get exactly the information they need when they need it. Unleash the power of your legacy applications. Make them available to browsers everywhere. For the free booklet, Web-to-Host Success Profiles, just give us a call at 1-800-933-6793 (ext 4336). Or point your browser to [www.attachmate.com/ad/cio.asp](http://www.attachmate.com/ad/cio.asp)

 **Attachmate™**  
*The Advantage of Information™*



## HOT TOPIC



# Maybe Not So Dumb After All

By Derek Slater

Enterprise resource planning (ERP) is now comfortably on the backlash side of the hype cycle. Various studies and articles decry the number of failed implementation efforts and the lack of quantifiable ROI, even for companies that pulled off these gargantuan projects without

crashing their business. (See, for example, "By the Numbers," *CIO*, June 1, 2000.) On top of that, formerly high-flying ERP vendors like Baan, System Software Associates (SSA) and J.D. Edwards have suffered severe slumps in their financial performance, with Baan and SSA being acquired by other companies.

Today's media darlings are trading exchanges—electronic marketplaces that aggregate suppliers and buyers in an attempt to wring inefficiencies out of the purchasing process.

But hold on a minute. How much efficiency can exchange

participation bring to a business that doesn't know what it needs to buy? "There is going to be an advantage for companies that have a good, clean source of management data," says David M. Schneider, a Los Angeles-based partner who leads all electronic market activities and the strategic change practice for consultancy PricewaterhouseCoopers. And that's exactly what ERP systems are designed to provide—good, clean, consolidated management data, including a look at inventory levels, purchasing plans and that sort of thing. "If the Internet is a bridge, but it connects to a dirt road when it reaches your company," then electronic exchanges won't provide the cost benefits they could, Schneider says.

So those who have toiled and sweated through ERP implementations shouldn't think the final word on ROI has been written yet. Further benefits in the increasingly interconnected business world lie ahead.

## THE INTERNET

## Viva Las Website!

**SO YOU WANT** to be a millionaire, but your fingers just aren't fast enough to land you a spot on the wildly popular television show. How about trying your finger on the slots at Jackpot.com ([www.jackpot.com](http://www.jackpot.com)) instead? All you need to do is register, and with a click of the mouse you too could be a millionaire.

The site, owned and operated by Idealab, a Pasadena, Calif.-based startup incubator, has taken branding to a new level. Its RocketSlot slot machine doesn't sport the common cherries, berries and bars of typical slots. Rather, what you'll be rooting for at each click are recurring advertisements. For example, three Buyjewel.com ads will net the player \$50 and three Paymybills.com ads garner \$5. The site makes all its money from these advertisers, and players don't have to spend a cent.

Each month, Jackpot.com awards one player \$1 million and gives away other prizes, including cash, two BMWs, six tropical vacations, 60 DVD players and diamonds. Not only that, Jackpot.com also offers a \$2 million Progressive Super Jackpot, that grows by more than \$22,000 a day and guarantees a full payout at least once every three months.

All that, and you don't even need to leave home.





High Performance  
Mission-Critical  
Internet Site Operations

**You Provide The Internet Site.**  
**We Provide The Tools,**  
**The People And The Seasoning**  
**To Really Make It Cook.**

**Why Do-It-Yourself?** Today, many companies are finding it difficult to pull together the tools, people and experience to keep their Internet sites up and running 24x7x365. SiteSmith™ manages and can assume complete responsibility for site uptime, user response time, and site security for high-performance Internet businesses. With SiteSmith nothing is overlooked. Nothing is left to chance. As you can imagine, not having to worry about your Internet site operations can be a tasty thought. For more information, visit [www.sitesmith.com](http://www.sitesmith.com) today.



SITES DON'T WORK WITHOUT US.



# mission:

put the stock market for the internet on the internet.

# critical:

use servers that can handle around-the-clock volume.

where do millions of investors go to follow the nasdaq stock market®? not to wall street, but to nasdaq.com. to build their web site, nasdaq needed high-capacity servers that stay up and running 24/7. servers that can handle up to 40 million hits a day and rising. the stock market for the digital world chose intel®-based servers for their e-business. companies around the world have considered their platform options and have made the same decision. intel® architecture is the ideal technology for running an e-business. because in the surge economy, if your business isn't ready for anything, it isn't ready. (servers for the surge economy → [intel.com/go/ebiz](http://intel.com/go/ebiz))

INSDAD +124



# On the Move

Compiled  
by Tom Field

## Gone Fishin'

**SOMETIMES YOU JUST** know when it's time to go.

That was James Donehey's experience at Capital One Financial Corp. One unseasonably warm morning in January, Donehey, the 51-year-old CIO and senior vice president for IT, was leaving for work when his 86-year-old dad asked if Donehey could play golf with him that day. Donehey declined, saying he just couldn't spare the time from work. He felt a twinge of regret as he drove to his Falls Church, Va., office—then he



James Donehey

turned on the car radio and heard the late Harry Chapin's "Cat's in the Cradle," a 1970s song about businesspeople who fail to make time for their families. Donehey recalls, "I heard that and I asked myself, 'What the hell am I doing?'"

He walked into his boss's office that day and negotiated the terms of his resignation.

After more than five years at the helm of Capital One's IT organization, Donehey has stepped down to spend

more time golfing, fishing and traveling with his family, as well as exploring new career prospects as a private consultant or IT adviser. "I'll see what's going on," Donehey says. "I'm not closing any doors, but after 30 years in IT, I do recognize that I need a break."

Capital One experienced boom years during Donehey's tenure, and that expansion has been reflected in the growth of the IT organization—from 50 staffers in 1995 to 1,800 today. This unbridled growth created Donehey's biggest challenge: "How do you deal with that inflow of people and still keep the culture and camaraderie you had when you could fit everyone in one room?" Donehey says.

Among his accomplishments, Donehey believes he helped raise IT's visibility at Capital One. And if he leaves any legacy, he wants it to be that the IT group will thrive long after he's gone.

In fact, Donehey has left such a sizable imprint on Capital One that it has taken two successors to replace him. The IT organization is now jointly lead by Marjorie Connelly, who heads the IT infrastructure group, and Laura Olle, who leads the IT development group.



## Player's Guide

### Barry J. Hammersley

### Maximus

Hammersley has been appointed CIO of Maximus, a McLean, Va.-based state and local government consultancy. Previously, he was that company's vice president of IS. Hammersley also worked for Unisys for 30 years, gaining extensive IT and government experience. In his new position, Hammersley will lead the company's strategic information technology efforts and its focus on multimillion-dollar system solution projects.

### Timothy F. Kowalski

### iCTConnectedTouch.com

Formerly CIO of Langhorne, Pa.-based ICT Group, Kowalski is now president of iCTConnectedTouch.com, a wholly owned subsidiary of ICT Group and a CRM services provider. Kowalski, who joined ICT Group as CIO in 1997, has served as CIO and chief e-commerce officer since late 1999. As president, he will direct ICT Group's Internet support services strategy.

### Jacques Malo

### Informission Group

Malo left the position of executive vice president and CIO at Quebecor, a Montreal-based IT services company, to become president and CEO of Informission Group, a Quebecor subsidiary. In his new job, Malo will bring more e-commerce solutions to Informission's worldwide clients.



## Dell to Deploy Selectica for Personal Systems eCommerce Enhancement

*Selectica's Internet Selling System Chosen After Extensive Testing, Evaluation*

SAN JOSE, CA — February 22, 2000 — Selectica™, Inc., a leading Internet Selling System (ISS) provider, today announced that Dell Computer Corporation will standardize on Selectica's award-winning ACE Enterprise™ to provide a global platform for guided selling and configuration capabilities to customers, using [www.dell.com](http://www.dell.com) to purchase personal systems, including desktop and notebook PCs.

## Cisco to Deploy Selectica for Enterprise-Wide eCommerce

*Six Month Evaluation and Successful Pilot Implementation of Selectica's internet Selling System Leads Cisco to Adopt ACE for Global eCommerce Operations*

SAN JOSE, CA — January 24, 2000 — Selectica™, Inc., a leading Internet Selling System (ISS) provider, today announced that Cisco Systems, Inc., has chosen Selectica's award-winning ACE™ software to power Cisco's enterprise-wide Internet commerce configuration capabilities. Cisco's decision to standardize on Selectica is the result of a six-month evaluation cycle and successful pilot implementation.

## LEADERS SELECT LEADERS

It's easy to set up a web store, but much more difficult to actually sell online. That's why eCommerce leaders Cisco and Dell both chose Selectica to power their next generation Internet Commerce configuration capabilities. With Selectica, Cisco and Dell will provide their customers a unique interactive buyer experience. Our Internet Selling System enables customers to find, configure and accurately order even the most complex products easily and efficiently. Find out how in our free guide *Seven Keys to Internet Selling Success*. Plus, learn how eCommerce leaders Cisco, Dell and others successfully sell complex products and services online in the new book, *Net Ready* (a \$24.95 value, free to qualified respondents). Just call toll-free 800-900-2850, ext. 3300 or visit: [WWW.SELECTICA.COM/NETREADY3](http://WWW.SELECTICA.COM/NETREADY3)



Go to [WWW.SELECTICA.COM/NETREADY3](http://WWW.SELECTICA.COM/NETREADY3) to qualify for a FREE copy of *Net Ready* (a \$24.95 value), the story of how eBusiness leaders like Cisco and Dell achieve online success (free to qualified respondents). Plus, all respondents will receive a free copy of *Seven Keys to Internet Selling Success*. Offer valid through 10/31/00. Void where prohibited by law. View complete rules at [www.selectica.com/qualifications](http://www.selectica.com/qualifications).





## ROBOTICS

## No Witchcraft Required

**IF YOU'VE EVER** watched *Bewitched*, that classic TV show from the '60s about Samantha the blond-haired witch and her hapless husband Darrin, you may well recall Samantha's magical ability to get household appliances to do their work all by themselves. Well today, even mere mortals might soon find themselves in the same position.

James Dyson, founder of Dyson Appliances, a vacuum kingdom in Wiltshire, England, has long been a pioneer in integrating technology and design into his world-famous vacuum cleaners. With its trademarked Dual Cyclone technology, Dyson has sucked up over one-third of the U.K. vacuum market and has given Hoover a run for its money both in the United Kingdom and abroad. Now Dyson is ready to offer a robot vacuum cleaner, which uses three onboard computers and 50 sensors to sense where it is and navigate around obstacles like furniture and the family dog, sucking up dirt and dust all the while—without human intervention.

Dyson hopes to make the vacuum widely available, but the price tag might prove to be a hurdle: The vacuum, which is still undergoing trials, will sell for about \$3,700. On the other hand, for those who have always dreamed of relaxing while the house cleans itself, it may be well worth the price.

## THE WORKPLACE

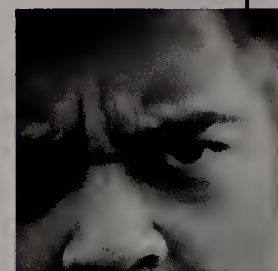
## Sticks and Stones...

**WHEN COWORKERS TREAT** each other badly, it's not just morale that can suffer—so, too, can the company's bottom line. That's the conclusion of a recent study by the University of North Carolina at Chapel Hill's Kenan-Flagler Business School on the effects of incivility at work.

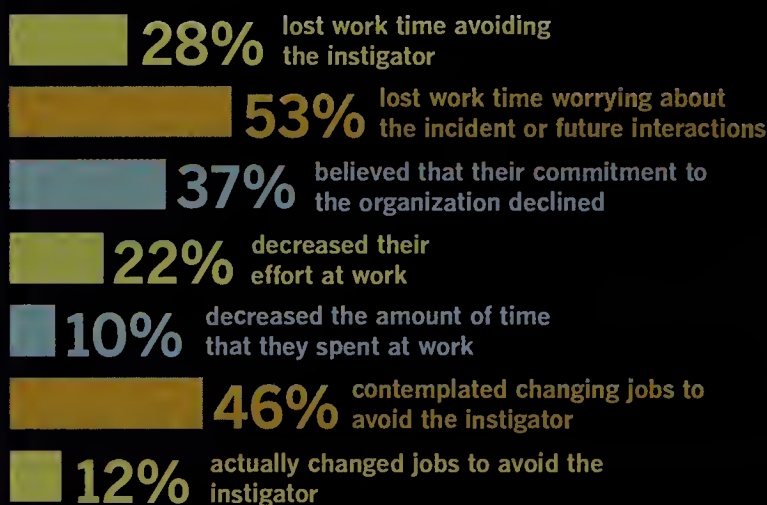
The study surveyed 775 people across a variety of industries and company sizes who were targets of incivility on the job. Examples of uncivil behavior included sending a nasty and demeaning note, making accusations about a lack of knowledge, undermining credibility in front of others and shouting at someone. Respondents who experienced such treatment described their reactions to the incident in the chart below. Only one-fourth were satisfied with the way their organization handled the situation, suggesting that leaders need to make some changes.

First, "be aware that there is a high cost to workplace incivility," says Christine Pearson, professor of management at UNC and author of the study. Second, realize that many instances of uncivil behavior go unreported. "In IT, especially, there is a tendency to look the other way if the instigator is especially valuable on the technical end," Pearson notes. But it's in leaders' best interests to listen to employees who report such problems and to take action. Particularly in IT, where demand for workers so greatly exceeds the supply, Pearson warns that those affected can easily get fed up and find another job.

For more on workplace relations, see "Kevin Schmidt," Page 208.



### WHEN INCIVILITY STRIKES: For 775 people who were targets of rudeness at work, the result was more than just hurt feelings:



Source: University of North Carolina at Chapel Hill

"PEOPLE ALWAYS PAY MORE ATTENTION TO WHAT LEADERS DO, RATHER THAN WHAT THEY SAY." —from *Pigeonholed in the Land of Penguins*, by Barbara Hateley and Warren H. Schmidt





**Original Ideas:**

|          |                       |
|----------|-----------------------|
| Internet | 0                     |
| Humanity | 1,000,000,000,000,000 |

The internet is no genius. It's just technology. Your people – your customers, employees, and suppliers – have the ideas. Give them PeopleSoft's new generation of e-business applications, and they may have a few thoughts about making your company more competitive.

CUSTOMERS • EMPLOYEES • SUPPLIERS

People power the internet.™

**PEOPLE**  
*Soft*



DIGITAL DIVIDE

# Wired Home on LaGrange

**SHOWS LIKE** *Jerry Springer* and *Who Wants to Marry a Millionaire?* have only reinforced TV's reputation as the "boob tube" and the "idiot box," but for residents of LaGrange, Ga., TV may actually be getting *smarter*.

In March 2000, the city of LaGrange announced that it was providing free Internet access via television to every household with cable. The first-of-its-kind program is funded entirely by the city and gives many of its 27,000 residents their first exposure to the Internet. The hope is that Internet TV will help bridge the digital divide, felt most keenly by poor families, kids and senior citizens.

The service is provided through Philadelphia-based Worldgate's Internet on Every TV Service and allows residents to connect to the Internet by simply turning on their cable-connected TV and navigating the Web using a wireless keyboard that is included in the package.

Those concerned about the ever-widening divide between technology haves and have-nots see such programs as offering a ray of hope, says Edward

Friedman, director of the Center for Improved Engineering and Science Education at the Stevens Institute of Technology in Hoboken, N.J. "Programs like this will open opportunities to many people who wouldn't have had access otherwise." —Daintry Duffy



## HOT TOPIC



## Insuring the Web

By Daintry Duffy

A security breach can cost a company a lot more than money: Customers' trust and the company's reputation are also at stake. And for dotcoms on shaky financial footing, it can mean the business. But in the battle against hackers, CIOs have more than just firewalls to fall back on; they can also take out some insurance.

Website insurance has been around for a few years, but it is only in the past year—with the high-profile denial-of-service attacks—that it has generated significant interest in corporate America. The premise is pretty straightforward: If your site is hacked into and your network goes down, your website malfunctions or you suffer a resulting loss of revenue, you can recoup some of those losses through an insurance policy.

The interesting angle is that the insurers that are offering these policies, such as Marsh & McLennan ([www.marshweb.com](http://www.marshweb.com)) and AIG ([www.aig.com](http://www.aig.com)), are partnering with security service compa-

nies to perform the upfront assessment of each applicant's risk level. To determine a client's exposure, they will look at how firewalls are configured, whether there are holes in the network, whether the company has an intrusion-detection system, and how many IS staffers are qualified and dedicated to monitoring security. The standards companies must meet to qualify for insurance are extremely rigorous; many won't make the grade.

Meanwhile, many more might be deterred by the cost. A baseline risk assessment can be about \$15,000, and the premium for \$25 million of protection is in the \$40,000 range.

Still, for companies that face significant risk, insurance could be a very smart move. It might even become a requirement of venture capitalists looking for ways to protect their investments. Explains Richard Dean, program manager for network support and integration services for Framingham, Mass.-based IDC (a sister company of CIO), "[having website insurance] says, 'We have an experienced staff and are properly managing our security.'"





# DRAG. DROP. DONE.

## THERE, YOU'VE JUST BUILT AN eBUSINESS.

Now there's a fast, easy way to put the "e" in your business. Introducing Aspect® eBusiness Architect, the revolutionary new development tool that takes you from imagination to application...in no time. eBusiness Architect provides a complete menu of pre-compiled, reusable common objects to let you quickly create eFlows: visual representations of your business rules that integrate your multimedia contact center, front- and back-office systems, and future applications into one centrally managed eBusiness. The result: dramatically improved and integrated eCommerce and eCRM capabilities. All without complicated code or costly deployment. Aspect eBusiness Architect. Suddenly, this whole eBusiness thing just clicks.

**ASPECT***The Starting Point for eBusiness™*

**BUILD YOUR eBUSINESS FASTER, SMARTER, CHEAPER.  
GET YOUR FREE eBUSINESS ARCHITECT DEMO TODAY.  
1-888-412-7728 [www.aspect.com/go/cim](http://www.aspect.com/go/cim)**

Aspect, the Aspect logo and the phrase "The Starting Point for eBusiness" are trademarks and/or service marks of Aspect Communications Corporation in the United States and/or other countries. © 2000 Aspect Communications Corporation.



# Davenport On...

## E-Commerce Goes Global

Connecting to the world, it seems,  
isn't as easy as you'd think

**GIVEN THAT THE** Internet reaches most countries and cities around the world, you'd think that e-commerce would have been global from the beginning. Not so, at least generally. The combination of language issues, currency conversions, shipping hassles and general unfamiliarity with foreign websites has made business on the Internet largely a domestic phenomenon. Americans surf U.S. websites and Germans buy from German sites. There are exceptions, but our e-commerce electrons have mostly stayed within borders. And if you're an American and think all the action is here, you should know that a U.S.-oriented website will reach only 5 percent of the world's population and only 25 percent of global purchasing power. If you're not interested in the other 95 percent and 75 percent, by all means turn the page now.

I recently participated in a conference on "E-Commerce and Global Business" in the domestic, but still raffishly lovely, town of Santa Cruz, Calif. I'm no expert on the subject—I chaired a panel, which sounds impressive but requires no knowledge—but there were plenty of academics there who have begun to do research on the subject and a few experienced CIOs. Part

of my interest derived from just hearing how much—or more appropriately, how little—global e-commerce there is today, and hence, what a great opportunity for growth it presents. Several University of Washington researchers reported that there are only 26 consumer websites that have any international revenue at all, and for them, the nondomestic revenues average only 2 percent to 3 percent of the total.

### Liberia.com

The first session of the conference was devoted to global regulation on the Internet. I don't generally find regulation that fascinating a topic, but some interesting issues were raised. My former University of Texas colleagues Sirkka Jarvenpaa and Emerson Tiller argued that old-economy regulations are very different from those we'll see in the new economy. In the old world, politicians and businesses often colluded to foster



ILLUSTRATION BY BEPPE GIACOBBE



# The winner in analog is now the winner in digital.



## Introducing the VP151 ViewPanel® with OptiSync™ technology. PC Magazine's Editors' Choice.

The verdict is in. The editorial staff of PC Magazine award their prestigious Editors' Choice award to ViewSonic's VP151 ViewPanel. With its unique analog and digital Optisync technology, the VP151 was chosen ahead of Sony®, NEC®, IBM® and others. Here's a sample of what the editors had to say:

*"In digital mode the VP151 had the highest contrast ratio in the group"*

*"Uniformity looked perfect"*

*"Analog images were rock-steady"*

The VP151 displays a full 15" viewable screen, supports 1280 x 1024 maximum resolution and features a 160° horizontal and vertical viewing angle. The same award winning technology and 1600 x 1200 maximum resolution is available in the 18" VP181. Both models are TCO '99 certified and come with a pair of built in 2-watt speakers. The ViewSonic VP151 is backed by our limited 3-year warranty on parts and labor. Plus we offer 24/7 customer support and an Express Exchange® service option is also available.

**At ViewSonic®, we offer the #1 best selling monitors and flat panel displays in the USA\*** Buy with confidence from the company that has won over 600 industry awards.

For more information, visit our website at: [www.ViewSonic.com/vp151](http://www.ViewSonic.com/vp151)

**OPTISYNC**  
BEYOND DIGITAL™



The Visual Technology Company™



regulation that protected businesses within a particular country. In the new economy, however, country representatives may be worried as much about national competitiveness as protectionism. New-economy online companies can move from one location to another relatively easily, which limits the power of any government to regulate them. In the old economy, governments regulated industries, but in the new economy, they may find it harder to regulate the business models that are the core of many e-businesses. What industry is Priceline.com in, for example—airlines, groceries, hotels, brokerage or retailing?

Another speaker, Steve Kobrin from the Wharton School of Business at the University of Pennsylvania, argued, à la Gertrude Stein, that there is “no there there” on the Internet. He argued for the creation of empowered international institutions to create and enforce global e-commerce regulations, including a global taxation authority and a Cyberpol to be the Interpol of international cybercrime (such a body might well have been use-

product and service types work with this model, and netchising examples are currently pretty sparse. But I am convinced that it's a powerful concept with potentially broad applications.

Linus Torvalds, the creator of Linux, as role model for the future of e-commerce? That's one of the arguments of Bruce Kogut and Anca Turcanu, a professor and a doctoral student, respectively, at the Wharton School. They investigated the role of common location in e-commerce innovation, particularly with regard to software development. I found one of their arguments quite compelling: The “follow the sun” approach to programming is very difficult to implement. The notion that one location's coders can send code on to another distant location for continued work while the first group of programmers sleep has always sounded suspicious to me. Kogut and Turcanu found, in examining several companies attempting this feat, that it requires a tremendous amount of discipline and many activities to build a shared context across geography. Their

other primary contention I find less compelling: The loose global network approach to software development used on Linux is a model for many other efforts in the future. How many Linus Torvalds are there in the world, anyway—people who are willing to exercise strong control over the architecture of a system but don't care about profiting

from it? Despite all its recent problems, I'd bet on the well-orchestrated, profit-seeking, geographically concentrated in Redmond, Wash., approach of Microsoft most of the time.

One other interesting feature of global e-commerce organizations was revealed by Kevin Vasconi, who was formerly the CTO of the Ford-Oracle Auto Exchange. Unfortunately there was no research presented on Net markets, e-commerce networks, e-exchanges or whatever you want to call them. And here is perhaps the reason why. In the past month or so, Vasconi got a new job, a new employer (the Ford-Oracle exchange was combined with the GM and DaimlerChrysler efforts), a new company name (Covisint), new partners (Renault and Nissan) and undoubtedly a few other new things. Events are simply moving too quickly in this space for any rigorous-minded academic to get a handle on them. Fortunately, your correspondent isn't rigorous-minded.

Given such rapid change, one attendee suggested that researchers who want to study global e-commerce should simply wait a few years until things all settle out a bit. I suppose that is a good strategy if you don't mind transferring to the history department. **CIO**

Tom Davenport cogitates at both Andersen Consulting's Institute for Strategic Change and Babson College. He welcomes reader comments at [davenport@cio.com](mailto:davenport@cio.com).



PHOTO BY FURNALD/GRAY

## Is it possible, or likely, that we will ultimately end up with many Internet companies officially registered as doing business in Liberia?

ful in tracking down the creators of the I Love You virus).

But Daniel Brenner, a cable television lobbyist and former FCC official, said that the need for new regulatory bodies is overrated. To the jurisdictional irrelevance of cyberspace, he pointed out that for hundreds of years we have dealt with a similar situation in which legal events are difficult to associate with particular countries: maritime law, or the law of the sea. This raises some interesting possibilities; maritime law is heavily based on registrations, the flag under which a ship sails and flags of convenience. Is it possible, or likely, that we will ultimately end up with many Internet companies officially registered as doing business in Liberia (the flag of convenience for many ocean-going ships because of its lax regulations)? This wouldn't be so different from corporate law in the United States, which gravitates to Delaware for its business-friendly laws.

According to my Andersen colleague John Beck and University of Western Ontario professor Alan Morrison, companies with international sales have lower returns on invested capital than those that don't. They conclude that the cost of international brick and mortar—and the expatriates and local hires to manage them—is often more expensive in money and management attention than the resulting sales and profit. Their proposed solution is “netchising”—the combination of an Internet presence for customer-facing processes and franchising arrangements when a local presence is necessary. Of course, not all



# Who's On The Bench?

Knowing the up-to-the-moment answer to this question is crucial to anyone providing Professional Services.

**Account4™** Web-based Professional Services Automation software helps you get the right people in the right places at the right time, *and* supports your business processes. For example ...

**Opportunity Management:** evaluate, track, and analyze your pipeline to maximize revenue;

**Resource Management:** optimize your staff's utilization by balancing demand with capacity;

**Client Management:** maximize engagement performance, and provide your contacts with the information they need when they want it — improving customer satisfaction;

**Invoice Management:** create on-line invoices and dramatically reduce the billing cycle.

Account4 lets you track time and expenses, and share and disseminate information on clients, consultants, engagements, and costs — *anytime, anywhere.*

Web-based software for  
**Professional Services Automation**

## How would your team score?

Do a quick calculation at [www.account4.com](http://www.account4.com).  
Also get a "Who's On The Bench" white paper and free CD.



**"PSA software users can expect a 3–8% increase in productivity."**

– The Aberdeen Group

## The Final Score

|                    | Productivity increase | Utilization increase | Additional revenue |
|--------------------|-----------------------|----------------------|--------------------|
| <b>Home Team</b>   | 3%                    | 30 people            | \$12M              |
| <b>Competition</b> | 0                     | 0                    | \$0                |

Based on 1000-person staff, billable 200 days/year @ \$2000/day.

Account4.com



# Ask the Expert

We're Not Experts on This, but We Know Someone Who Is

## Do the Right Thing

**Alan Yuspeh**, senior vice president of ethics, compliance and corporate responsibility for Nashville, Tenn.-based Columbia/HCA Healthcare Corp., answered readers' questions on CIO.com about his area of expertise, chief ethics officers

**Q: What is causing the rise in demand for chief ethics officers?**

**A:** If corporate ethics is defined broadly—to include legal compliance, ethical conduct and corporate social responsibility—there is increasingly a recognition that pulling these matters together under a specific corporate officer has much benefit. The key tasks involved—standard setting, awareness building and internal report handling—are not well-handled in many organizations. And in other organizations, a separation of responsibility may lead to a lack of unity in approach. The position of chief ethics officer increases the emphasis on such matters and does so in a cohesive fashion.

**Q: What are the primary differences between this role and the functions normally filled by the compliance officer and information security officer?**

**A:** At Columbia/HCA, I serve in all three roles. If one conceived of an ethics position alone, it would typically involve articulating standards of conduct in terms of organizational values



and culture and inculcating these throughout the organization. It might also involve ethical sensitivity of major organizational decisions. Ideally, an effective corporate ethics officer would advise the company on business issues that pose value-laden decisions.

**Q: As a chief ethics officer, how would you craft and subsequently enforce a global ethics policy for a multinational organization? Given the diversity of cultures and acceptable but different cultural norms and business practices in different regions of the world, is it possible to expect your employees and other business partners (vendors, suppliers, partners via joint ventures, alliances and so on) to adhere to a common policy?**

**A:** Your question is very insightful and frankly delves into one of the most challenging issues that faces multinational corpo-

ILLUSTRATION BY MICHAEL LOTENERO



© 2000 Comdisco, Inc.

**[ I pick the worst times to fall ]**

I'M AN OUT OF BALANCE CONTINUITY PROGRAM

**COMDISCO**

How do you achieve balance? First, you need some answers. What are your peers doing? How do you get the best return on your investments?

And exactly how available do your business units need to be? To find out, contact Comdisco for Business Continuity Benchmarking. We have

the personnel, the tools and the experience to get the answers. 1-800-272-9792. [www.comdisco.com](http://www.comdisco.com). Delivering the promise of technology.



## Ask the Expert

rations. I think some aspects of business conduct are universal, such as an avoidance of a conflict of interest. On the other hand, some cultural distinctions may make American norms seem out of place. For example, increasingly, organizations are moving toward tight limits on offering or accepting gifts. This, however, is more acceptable in other parts of the world. I think the challenge is to consider the underlying purpose of an American policy and to ask what variations can be allowed in

## An ethics officer should be a good listener, open to varying ideas, highly nonjudgmental and something of a visionary and idealist.

order to recognize cultural differences without sacrificing the ultimate objective. Many corporate social responsibility issues are raised in foreign operations, such as the application of environmental, health or safety standards from the United States to a foreign setting. The appropriate response in each of these areas depends greatly on the specifics of the situation.

**Q: What kind of background do you have? How does your role impact your company's bottom line?**

**A:** I have an MBA and a law degree. As part of a government contracts law practice for many years, I was the coordinator (executive director) of a defense industry ethics initiative. I think the role can and does impact the bottom line. For example, part of my current job is to ensure compliance with laws and regulations, which certainly affects operations. We have seen numerous cases in the last 20 years where major ethical

lapses have had disastrous effects on a company's overall well-being. If there had been an empowered ethics officer in some of those companies, he or she might have been the moral force to push a decision that proved fundamentally wrong in a different direction.

**Q: What is the job description of a chief ethics officer?**

**A:** The chief ethics officer typically oversees all aspects of ethics and compliance programs; in-

cluding standard setting; communication of standards; dealing with exceptions or problems; and overseeing, monitoring and ensuring the proper organization of operational supports. He or she also advises senior management in the ethical or compliance aspects of decisions.

**Q: What background should a chief ethics officer have? What knowledge, skills and abilities are necessary to be effective in this role?**

**A:** If the ethics officer is also the compliance officer, a law degree and some experience practicing law is helpful. In general, an ethics officer should be a good listener, open to varying ideas, highly nonjudgmental and something of a visionary and idealist (which is sometimes hard to balance with day-to-day pragmatism). He or

she should communicate well and have some aptitude in the area of training. Exposure to a wide range of organizational ethics initiatives, through whatever means, is also useful.

**Q: I'm shocked that such a title exists. Are we so morally bankrupt as a country that employees do not know right from wrong? Is the current political and social environment so corrupt and distorted that all companies must resort to ethical edicts that may counter an individual's conscience? I understand that medicine has always faced ethical problems, but is this necessary for all companies?**

**A:** The purpose of a formalized attention to business ethics is not to reiterate fundamental values—many of which are taught in the home—that we presume individuals learn as part of the maturation process. In other words, we are not trying to coach people on being honest, though we are sending a leadership message that says that business pressures should never be seen as justifying a lack of integrity. More concretely, the purpose of this effort is to assist individuals in identifying difficult business decisions that have some ethical dimension and then resolving these in a manner that reflects the organization's values. This may entail what I call microethical issues, such as what constitutes fairness in a particular procurement decision. Or it may entail macroethical issues, such as whether a U.S.-based company should meet U.S. environmental standards in a foreign country with fewer environmental laws. The amount of case material on this topic suggests the breadth of the field and its acceptance as a legitimate concern of business enterprises. **CIO**

To recommend an expert for this column or suggest a topic, e-mail Senior Writer Daintry Duffy at [dduffy@cio.com](mailto:dduffy@cio.com).

## Ask the Expert

Have a question about **Internet privacy**? **Gayle Crowell**, director of the board of directors for San Mateo, Calif.-based Epiphany is available to offer insight and advice on Internet privacy best practices. Post your questions for her now until Aug. 15 at [www2.cio.com/CIO/expert](http://www2.cio.com/CIO/expert) or e-mail questions to [asktheexpert@cio.com](mailto:asktheexpert@cio.com).

**cio.com**



## PlanView's Web Software for Project and Workforce Management

### Your CEO:

"How confident are you in these project schedules? Anything you can quantify?"



### Your Stakeholders:

"Did you read on the 10-k where IT had to write off the *whole* three million this quarter for that failed project?"



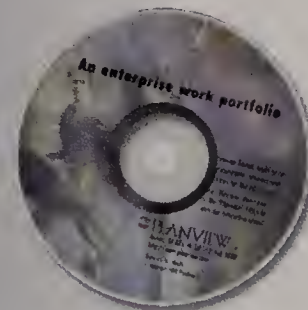
PlanView optimizes the staffing of multiple projects. Consider your staff's skill mix and TRUE workforce availability when scheduling projects and other work!

## WHEN YOU OVERLOAD YOUR WORKFORCE, SOMETHING IS BOUND TO DROP...

Managers, employees and others in the enterprise **use the web** to manage projects, manage the workforce, and self-administer employee information.

- Manage multiple projects with powerful middle-tier software. Planning engines calculate critical path; search engines find qualified people; scheduling engines redefine resource priorities. PlanView notifies everyone on changes in schedules and availability.
- Managers, contributors and other stakeholders collaborate through web-based tools for statusing, document management, and portfolio management.
- Each role has a unique, dynamically built web portal customized for their needs and authority.
- Your employees self-administer status on their projects, update their skills, schedule vacations, etc.

**Call us or visit  
our website to  
request a free  
CD Demo!**



[www.planview.com](http://www.planview.com)

 **PLANVIEW** INC

Tel 512 346-8600

PlanView is a registered trademark of PlanView Inc.  
© 1999 PlanView, Inc. All rights reserved.



# Total Leadership

## Who's Next?

Grooming your successor is critical both to the future of your organization and to your own career

BY PATRICIA WALLINGTON

**WHEN YOU MOVE** on to another position, who will take your place?

The answer may not be as straightforward as you think. Most companies today do have a succession planning system in place, it's true. But consider this: At a company I worked for, a CIO position in a critical business unit became available due to unforeseen circumstances. The business unit president asked me for help in filling the position. At our initial meeting, I asked to review the top candidates identified in the formal management succession plan. The president's response? "None of those candidates are really serious contenders for the job." And this was in a company with a well-defined and disciplined succession planning process. In actual fact, the number of times a replacement candidate was chosen from the formal system was far less than one would expect. The result was that everyone's expectations were disappointed: those who thought they were serious candidates for the position, those who assumed the position could be filled promptly from a pool of ready candidates and those who invested a lot of time participating in the planning process.

There are a lot of good reasons for succession planning,



not the least of which is your own ability to move on to other opportunities without jeopardizing the progress of your organization. But at all too many organizations, planning is really just a paper process without much real benefit. How can you make good plans for your own succession? Let's begin by forgetting about the process and the paper.

**Start Early.** This may be radical, but I believe succession starts with recruiting. Think about the requirements of the CIO position and how different they are today from what they were five years ago. It is not enough to hire excellent technical people. You need to assess their potential for the other dimensions of success, including business savvy, good communication skills and leadership.

Some years ago, I tried to make this point with my managers as we were deciding which of our MBA summer interns would

ILLUSTRATION BY BARBARA HRANILOVICH





**Your best customers leave  
quite an impression. Do the same,  
and they won't leave at all.**

*Which customers are  
most profitable? And  
how do you impress  
their socks off? On  
the Web and beyond?  
SAS® can tell you.*

Lasting impressions mean everything, even in the fast-paced world of e. With SAS you can bring together customer data from all contact points—bricks *and* clicks. Turn that data into knowledge about customer behavior and preferences. Meet customer demands. And build more profitable relationships. Leverage the power of SAS to profile and segment target markets, personalize Web visits, and create multi-channel campaigns that have real impact. On your customers and your bottom line. See what we mean at [www.sas.com/impress](http://www.sas.com/impress)

phone: 800.727.0025  
E-mail: [cio@sas.com](mailto:cio@sas.com)  
[www.sas.com/impress](http://www.sas.com/impress)

*The Power to Know™*

**sas**  
e-Intelligence



## Total Leadership

get permanent offers. The managers unfailingly rated the best technically skilled intern as the top choice. But I reminded them of our end-of-summer dinner party and rated highest those who were best able to participate in the dinner conversation. My managers then enhanced our ranking system to capture this element, with a little humor: Those who could converse with me through dessert ranked highest; those who made

### Don't assume that your successor must have the same profile you do.

it through the main course came next; and those who couldn't get through the salad were ranked last. Obviously, this was not the only criterion, but it was a way to bring people with the potential to advance into the organization.

**Appreciate Variety.** Don't assume that your successor must have the same profile you do. Try to develop a range of talents, not a clone of yourself. Organizations change and the needs for leadership can also change over time. At Xerox, I replaced a strong business leader (who went on to be president of a Xerox division). We built on that business foundation and focused on growing our technical excellence. In this case, the mix of business and technical experience in my profile provided the multidimensional leadership needed for the organization to grow in other dimensions.

**Provide Opportunities.** Many times those who are potential successors do not really know what they are letting themselves in for. Provide the experiences that will help them understand the role. For example, let them sit in your place when you go on vacation. They will get to see the problems that typically cross your desk. Empower them to take action and commit to live with their decisions when you return.

**Enhance Their Credibility.** One of the most daunting challenges for a CIO, especially for those who have followed the traditional IT career path, is establishing credibility with the senior business executives. Moving from a narrow or functional specialty to a broader business context is a big step. Help your potential successors establish credibility. Give them opportunities to be showcased with the senior executives. Protect them in that environment. Transfer some of your own credibility through your sponsorship remarks about them. This may be more important than you think. Assuming your company is satisfied with your performance, it can be hard for your colleagues to believe anyone else could have the same level of competence you do. And that can be a problem: If you have no successor

alternatives, you will be stuck in your position long after you desire to move on.

**Set Them Free.** Sometimes the best way to ensure qualified successors is to let them go. Encourage your managers to broaden their experience. You may be able to do this with temporary assignments or task force participation. You may have to let one of your best go to another position to get the experience. Either way, it will be a long-term investment. With the experience they gain, they will be that much more valuable when they return.

**Be Honest.** Be honest in your feedback and assessment of potential successors. Your feedback is one of the most valuable gifts you can give employees. You have the personal experience of the job and the best view of their skills and performance. Balance their potential future with their present skills.

**Look Far...** If successors are not readily available in your own organization, look beyond IT. Go to the business. Seek out and build relationships with potential. Those who have not grown up in IT are not always aware of the possibilities. Recruit them for a rotational assignment, if possible. It is a way for them to experience IT without making a long-term career decision. One of my most successful recruits came to IT from a field sales organization for what was to be an 18-month to two-year assignment. She never went back, and ultimately became the CIO of a major division.

**...And Wide.** If necessary, go outside the company. Bring in an experienced executive to be second in command. Recruiting from the outside has some benefits and some risks. New perspectives are always valuable. New people see things differently, and that can be a real catalyst for change. The downside is the need to integrate that new person in the culture. That integration strategy isn't easy, but it's essential to the newcomer's ability to gain respect.

Your efforts in implementing these actions will be of great benefit to your people and your organization. Make sure your own career plans are included. Good luck! **CIO**

Send your own succession tales or other thoughts about our ongoing Total Leadership column to [leadership@cio.com](mailto:leadership@cio.com). Before retiring in 1999, Patricia Wallington was corporate vice president and CIO at Xerox Corp. In 1997, Wallington was inducted into the Women in Science and Technology Hall of Fame and named by *CIO* one of the 12 most influential IT executives of the decade. She is currently the president of CIO Associates based in Sarasota, Fla.



PHOTO BY FURNALD/GRAY



# THE INTERNET RELIES ON NSI.COM. NSI.COM RELIES ON IBM UNIX.

COMPANY: NETWORK SOLUTIONS, INC.

MISSION: WORLD'S LEADING REGISTRY  
OF WEB ADDRESSES

CUSTOMERS: 14 MILLION DOMAIN NAMES  
WORLDWIDE

NEW SERVERS: IBM S80 (WORLD'S FASTEST)\*  
AND IBM B50 UNIX® WEB SERVERS

OLD SERVERS: SUN SPARC SERVERS

WHY IBM? "IBM PROVIDED THE SCALABILITY  
TO HANDLE OUR MASSIVE GROWTH  
FROM QUARTER TO QUARTER."  
JIM RUTT, CEO

LEARN MORE ABOUT IBM UNIX SERVERS  
AND SPECIAL OFFERS AT

[ibm.com/servers/nsi](http://ibm.com/servers/nsi)

**IBM**

IBM @ business servers. Technology. Innovation. Magic.

IBM and the e-business logo are trademarks or registered trademarks of International Business Machines Corporation. UNIX is a registered trademark of The Open Group. \* Performance claim based on SpecWeb96 as of 6/27/00. All other products or company names are or may be trademarks or registered trademarks of their respective companies. © 2000 IBM Corp. All rights reserved.



# Career Counsel

Mark Polansky Offers Advice to Aspiring CIOs and IT Managers

## Dueling Expertise

**Q:** What qualifications should a CIO have? The typical answer to this age-old question is that a CIO needs to be business focused rather than technology focused. I agree with that. However, every job ad I see for a CIO position, at least here in Silicon Valley, calls for 10 years' experience in networking and serious technical knowledge. Maybe it's because startups can't afford a senior person and a good technical person. I worked my way up through various business areas, including engineering and quality, to vice president of IT, and have a strong business and process focus. But it seems that contrary to what you and other people are saying, that's not what the jobs out there are all about.

**A:** Let's address a few subtle but critical points on the topic of balancing CIO business and technical experience. First, the issue of the true CIO role (and the ideal CIO background) is not about being business focused rather than technology focused, as you have stated, but being business focused *and* technology focused. Possessing one expertise without the other may be a leadership problem with likely negative outcomes.



Second, I doubt that the help-wanted writers intentionally exclude business skills and experience when asking for networking experience and depth of technical knowledge. If a given ad is technically focused, then perhaps the position being represented is not a true CIO role but is using the title to dress it up and attract responses.

Third, you are correct that in early-stage companies the CEO and other founders may have already established a business plan for the enterprise, and thus less may be expected of a CIO in this area, at least in the short term.

Lastly, your impression of help-wanted ads for CIOs in Silicon Valley may be skewed toward the world of suppliers and vendors of hardware, software, infrastructure and services in which technological innovation outweighs the business side of the CIO position, especially if it crosses over into the CTO role or vice versa.

ILLUSTRATION BY DARCY MUENCHRATH



# The New Look of Outsourcing

E-quipped to enable the online business revolution, today's "netsourcing" bears little resemblance to the outsourcing of old

WITH THE DOT-COM EXPLOSION and the Fortune 1000 clamor to re-engineer for Web-enabled applications, it's clear that the Internet plays a starring role in doing business today. While leveraging the benefits of the Internet is on the mind of every corporate executive, what remains in question is the best way to get to that end game. E-business can put a company on the road to sizable rewards, but the path can be fraught with peril unless the underlying technology is robust enough to handle the unique demands of e-commerce.

Powering up for e-business is no small undertaking. Yet you don't have to be Einstein to know *why* you've got to be there. Corporate e-business applications are quickly moving from drawing board to online reality, however, that's only half the battle.

Once these applications are developed and rolled out, you come face-to-face with the enigma of many an otherwise-decisive CIO: how to provide the predictable service and performance required to ensure your successful foray into the world of e-business.

Doing business online magnifies all the issues that have come to be synonymous with the high-

pressure territory of distributed IT enterprises—availability, scalability, recoverability, security and all the rest. Problem is, the complexity of these critical management spheres escalates exponentially in an e-business world.

## Keeping the Net Generation Happy

After all, it's a given that an electronic storefront will be open for business 24x7x365. That virtual "*always open*" sign is a big part of the Internet's ubiquitous appeal. Online customers—whether B2C or B2B users—are an impatient lot: make them wait too long or come back later and you may never see them—or their buying power—again.



It's a brutal reality of the online culture that a customer can easily "shop" elsewhere with just the click of a mouse. Loyalty be damned. Face it: People do business online for the immediacy, and e-business is a strong purveyor of instant gratification.

No doubt that maximum uptime is a must. Then factor in the potential for huge variances in customer demand. The need to combine maximum uptime with industrial-strength scalability could easily cause a dormant ulcer to flare up. Especially considering that most companies can't ramp up the management systems and the number of skilled staff to control the nuances and complexities of Internet-enabled business.



### The Moment of Truth Arrives

So you've built your online applications and you're ready to go live. Or are you? Can your e-business infrastructure really do the job, all day, every day, regardless of unpredictable demand? According to IDC's 1999 Technology Integration Panel Study of North American Businesses, over

options for harnessing and leveraging the power of the Internet. Not only do they want to move e-business applications into production as rapidly as possible, they want optimum

assistance with the arduous task of going from business to e-business. Lumped generally under the term "outsourcing," these companies can step in and take charge of some or all of your IT and network infrastructure needs.

By focusing on its business specialty—managing the infrastructure which underlies its clients' applications—an outsourcer can free a company's in-house staff to stay focused on core business issues and bottom-line goals. Done right, outsourcing delivers improved application uptime that translates to revenue growth and greater customer loyalty and retention—all for a controlled, predictable fee.

### Smoke and Mirrors

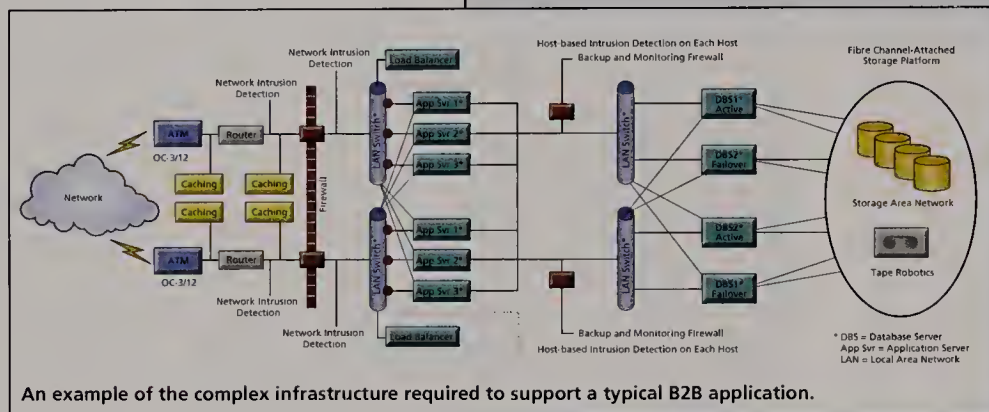
But beware: not all outsourcing is created equal. Many first-generation hosting providers offer a piecemeal infrastructure comprised of technology components that can't keep pace with the demands of e-business. Typically, their customers are left with the burdens of not merely application development, but also integration, implementation and equipment provisioning.

"We wanted a well-oiled machine, not a bunch of nuts and bolts," says a CIO from a leading Fortune 1000

**C**OSTLY AND COMPLEX, the technology infrastructure that supports your e-business can make—or break—your e-business. Building out an enterprise-class IT/network infrastructure in house,

hiring the necessary technical skill sets, and providing 24x7 operational support is a huge undertaking—one that can't be taken lightly when supporting mission-critical

e-business applications. Netsourcing is a viable and cost-effective solution that accelerates time-to-market and delivers a complete, reliable solution for mission-critical e-business applications.



An example of the complex infrastructure required to support a typical B2B application.

70 percent of network or systems downtime is caused by factors other than application failure.

If that weren't sobering enough, all indications are that the problem is getting worse. Why? Because most internal IS teams either don't possess the right skill sets to work in such a new environment or are already undermanned and unable to retain qualified staff in a limited talent pool.

"High profile e-failures," notes the Yankee Group analyst Chris Selland, "have proven that it is not enough to build an e-business—ongoing success is

service and performance once the applications are rolled out.

### Beating the Resource Crunch

This paradigm of the New Economy is stretching IT budgets and staff resources like never before, with the e-business model encompassing the complete spectrum of infrastructure components—servers, networking, storage, performance management,

**"High profile e-failures have proven that it is not enough to build an e-business—ongoing success is highly dependent on a company's ability to provide sustained performance."**

highly dependent on a company's ability to provide sustained performance. Success with the e-business model will go to those able to appropriately scale and support an e-business infrastructure over the long term."

With time-to-market being a huge part of the e-business equation, Global 1000 corporations and dot-coms alike want new-and-improved

security and much more. Building and managing the scope and complexity of this kind of enterprise-scale infrastructure is something that few IT organizations have the capital, time or expertise to completely handle.

Fortunately, there are alternatives to the do-it-yourself approach. A wide range of service providers of different types and capabilities offer

company. "We wanted someone who could take care of everything below the application layer."

He's not the only IT executive who feels that way. Ricky Aaron is CEO of myspace, a leading online information management company. "We were looking for a provider who had the proven ability to support a fast-growing and high functionality



site, as well as a commitment to provide solid, reliable, scalable services we could build our business on for years to come," says Aaron.

#### A New Option: Netsourcing

With its technical complexity and performance challenges, the bold new frontier of e-business is leaving first-generation hosting squarely in its rearview mirror. In its place is a growing demand for a new breed of e-business infrastructure outsourcing called "netsourcing," which is obtained through a single-source

emerging as a supercharged alternative to first-generation hosting for a number of reasons. Chief among them is customers gain the ability to obtain all the services listed previously from a single provider. Another key difference is the ability to achieve sustained performance and operational support for applications that demand the highest levels of availability and scalability.

These two characteristics make netsourcing a particularly sound match for customers and applications with high-end, high-availability requirements that go well beyond what many

ny's e-business infrastructure. One of netsourcing's biggest value-adds is that it delivers services that are truly "application ready"—providing a total turnkey approach to e-business infrastructure. This differs dramatically from a first-generation hosting provider who may provide co-location services that call for a client to supply its own fully configured server that will be placed in a secured data center cage. In contrast, a netsourcer is likely to provide the servers, the storage systems, security and network management platform designed into the custom-built,

**"Netsourcing is more than hardware. It's actually supporting your customer relationships. Your customer relationships come down to availability of your application, and that comes down to the netsourcing provider. Intira's not only hosting our back-office, they are hosting our customers."**

service provider who operates, controls and manages the entire infrastructure—both IT systems and the network.

The netsourcing model is designed to proactively maintain business continuity by avoiding failure and by providing a single point of accountability. Netsourcing focuses on providing a complete infrastructure for Web-based e-commerce and other next-generation applications by combining:

- Network services
- Complex, mission-critical hosting
- System software and hardware provisioning
- Infrastructure integration and support services
- Business continuity services

"Netsourcers," says Selland of the Yankee Group, which coined the term, "provide a single-source, highly available, scalable, high-performance platform for hosted business, commerce and multimedia applications."

#### The Netsourcing Advantage

This is definitely not your father's idea of outsourcing. Probably not even your older brother's. Netsourcing is

network and hosting providers can offer. Netsourcing adds significant value beyond merely hosting an application, because it provides all of the requisite network and IT infrastructure services, the full range of skilled technical resources, and management systems necessary to keep that application running and available at maximum service levels.

Netsourcing providers assume a much greater percentage of a compa-

fully managed infrastructure solution.

Because of their extensive investments in IT and network technology and professional expertise, netsourcers can significantly shorten a company's time-to-market for e-business applications. Typically, companies who use netsourcing can expect to save two to four calendar months when deploying their e-business applications and can plan to be up and running in 30 days.

**T**RAPEZO'S PARTNER FUSION PLATFORM, a comprehensive, Web-based merchandising and content management service that integrates and automates the entire e-business partnering process end-to-end for faster, more efficient and profitable online partnering, is critical to their success.



Trapezo recognized that a robust IT and network infrastructure was essential for running its mission-critical business-to-business application. With limited resources and a commitment to outsource non-core operations, Trapezo chose not to build the required infrastructure in-house, but to outsource it.

Trapezo researched the alternatives and chose a netsourcing solution from Intira Corporation which delivered the complete solution Trapezo was looking for — one provider that could power its Web-partnering application service with a world-class integrated IT and network infrastructure managed and monitored around the clock, skilled in-house technical expertise, robust services, guaranteed application availability and scalability to support growth.



## Intira Corporation: Enabling e-business with a foundation you can count on

Intira recognizes that your application is your business, not the complex IT/network infrastructure and operations that support the application. That's why our Netsourcing solutions have been built and engineered from the ground up to exclusively support mission-critical e-business applications with the highest levels of application availability.

Intira Netsourcing Solutions combine all the IT and network elements your e-business applications require to deliver successfully time after time—an integrated, world-class IT and network infrastructure; highly automated, secure operations and management systems; a broad set of highly skilled technical resources; and a full range of robust, value-added services. And, because Intira has direct and immediate control of the entire infrastructure your applications reside on, only Intira can offer a comprehensive SLA guaranteeing application availability up to 99.95 percent, and provide you with a single point of accountability for the entire Netsourcing solution.

At Intira, we're driven to be more than just the industry's leading Netsourcing provider. We want to be a full-fledged partner in your success. That's why our Netsourcing solutions are designed to accelerate your time-to-market, reduce costly staffing and technology investments, and enable you to focus on building your core business.

With Intira, you'll get more—far more—than what traditional, first-generation network, hosting, or co-location providers can offer. You'll get a solid e-business foundation you can count on today and far into the future.

**For more information about Intira's  
Netsourcing Solutions, please visit our  
Web site: [www.intira.com](http://www.intira.com)  
or call 1-888-350-6290.**



©2000 Intira Corporation. All rights reserved.

"Netsourcing is more than hardware," states Randy Wilcox, CEO and president of SingleSourceIT, a Web-based information technology supply chain management solution that serves the Global 2000 in a market estimated at \$160 billion, "it's actually supporting your customer relationships. Your customer relationships come down to the availability of your application, and that comes down to the netsourcing provider. Intira's not only hosting our back-office, they are hosting our customers."

### Single Source Accountability

Because they take control and operational ownership of all IT and network infrastructure and provide comprehensive integration and support services, single-source netsourcers have the ability to offer a monumentally important benefit: service levels.

Vendors with partial or alliance-based offerings or those that broker a set of providers into a single solution simply can't achieve this.

When applications are truly business-critical, it is imperative that companies insist upon a comprehensive service level agreement (SLA) backed up with always-accessible Web-based reporting tools to measure infrastructure availability and assure SLA compliance. Today, only a few leading netsourcers can deliver this kind of agreement, but its value to an e-business is virtually priceless.

Like outsourcing, however, not all SLAs are created equal either. If an infrastructure service provider doesn't own the entire infrastructure, they are relegated to offering numerous SLAs covering individual infrastructure components. Only a single, comprehensive SLA that looks at the infra-

structure as a whole can guarantee all-important application availability. This is especially important in the high-stakes realm of e-business.

One company that saw this firsthand is Trapezo, a Web-based partnering service for e-businesses and their content partners.

"We searched for one, focused, comprehensive provider for our infrastructure needs—one who could offer SLAs ensuring up to 99.95 percent application uptime, and 24x7 proactive monitoring and management of the outsourced infrastructure solution," recalls Satyen V. Kothari, Trapezo's CEO, president and co-founder. "Intira met all the criteria for us."

### Buying Peace of Mind

Intira has quickly captured a leadership position in the netsourcing market because of its demonstrated ability to deliver on the full promise of single-source netsourcing. Intira provides a turnkey solution for e-business applications that includes a seamlessly integrated, highly automated and completely secure technology infrastructure—fully managed and operated up to the application layer—that guarantees uptime and provides a single point of accountability.

The profit potential of Internet-driven applications is immense. However, with the heightened complexity of e-business comes the risk of underestimating the infrastructure and support effort it will take to actually cash in on e-business. No one wants to be the next prominently publicized e-failure.

Developing and managing the applications themselves is tricky enough. To tip the scales in your favor, it may be wise to take a new look at your infrastructure outsourcing options. Today's next-generation netsourcers offer high-end services to ensure the availability of high-end, high-value applications. Netsourcing is emerging as the ultimate weapon for achieving strategic market advantage with your e-business applications. •



# NETWORLD<sup>SM</sup> + INTEROP<sup>®</sup>

CONFERENCE AND EXHIBITION  
**ATLANTA Sept. 24-29, 2000**

**LINUX**  **ATLANTA 2000**  
BUSINESS EXPO

Co-located at NetWorld+Interop for the first time

Connect with

## E-BUSINESS SOLUTIONS

at the Southeast's Leading High-Tech Event

Featuring the

**ASP<sup>™</sup>**  
SUMMIT

Conference

Register online  
for your  
**FREE**  
exhibits  
pass.

In today's hyper-competitive new economy, your company is only as strong as its e-infrastructure. Success and survival depend on constant innovation. Meet your infrastructure needs to advance your e-business goals at NetWorld+Interop 2000 Atlanta—the Southeast's leading high-tech event.

Learn to maximize the value of your technology investment at the two-day Strategic Interop conference, part of 700+ hours of world-class education. Meet more than 500 leading vendors and start-ups with solutions to help you transform your information infrastructure into a competitive asset.

Join 50,000+ professionals capitalizing on the convergence of voice, data and video. At NetWorld+Interop, leaders and decision-makers from top enterprises and service providers come together to strategize, innovate and see where the industry is going.

Keynote by  
**Carly Fiorina**  
of Hewlett-  
Packard

**Connect with success.**

Register Today at **[www.interop.com](http://www.interop.com)**

**888-886-4057**

Use Priority Code: **CCMG2**

KEY3MEDIA EVENT

©2000 Key3Media Events, Inc., 303 Vintage Park Drive, Foster City, CA 94404. All rights reserved. Key3Media, Interop, InteropNet, iLabs, eNet, Strategic Interop, Summit, LINUX Business Expo, Linux Solutions Zone, Interop Garage, Start-Up City, ENT Zone, Interop Insider, and related design marks and logos are trademarks owned or used under license by Key3Media Events, Inc. and may be registered in the United States and other countries. NetWorld is a service mark of Novell, Inc.



### PEOPLE LIKE ME

**Q:** I'm a CIO at a multibillion-dollar, private Wall Street company. I rose up from the trenches as a technical expert with highly focused business instincts and a wide range of operations experience. I was previously the president and founder of a small boutique consulting business that was bought by my current employer with the intent of securing the talent of the employee base—which is now the company's Information Science department.

I am in my early 40s and could retire at any time—but I don't want to. My dilemma is that I have no degree and no certifications, only an incredible body of successful work experience. The reason I started my own business in the first place was

what it may imply about you. But patience and perseverance should win out in this very strong seller's labor market. If this approach misses, do what lots of others with capital are doing these days: innovate, invest and incubate.

### GETTING UP TO SPEED

**Q:** I have a technical background as a systems engineer and an MS MIS degree from a prestigious European school. I have always been informed about the newest technologies and issues, but I left everyday IT nearly seven years ago to start a new business. I now have managerial experience but no telecom experience, and no e-commerce projects to add to my résumé. I know technology, I know how to manage people and I am also bilingual. Should I give it a try as a CIO?

**A:** Seven years away from IT is a very, very long period of absence in this fast-moving continuum. As you've noted, you have not yet acquired any experience in two of today's most important IT areas—networking and e-commerce—and you are likely unfamiliar with much of the state-of-

the-art in distributed computing, data warehousing, ERP systems, customer relationship management (CRM) applications and so on. And when you left IT, you were a systems engineer with little or no management experience.

Having said the obvious, you have an information technology foundation and leadership experience to bring to bear, plus some particular industry expertise that you haven't mentioned. I would therefore venture into the market to see what reception you might receive in competing for the top IT position at smaller companies within your industry knowledge space, but be prepared to fall back to a lower level. Your main objective must be getting back into an appropriate IT career path and gaining an opportunity to update your skills and experience for future growth.

### CIO FOR HIRE

**Q:** I would like to explore the opportunity of marketing myself as an interim CIO consultant. Any tips or resources you can direct me toward to more fully consider this career option?

**A:** If you have industry visibility and a strong reputation based on a track record as a highly accomplished CIO, then you might qualify for this very rewarding career alternative. This is particularly true if you have gained fame in turning around troubled IT environments and building world-class IT functions and organizations—especially in large and complex companies in a particular industry such as financial services or retailing or in a certain business model such as high-volume distribution companies.

## If you have industry visibility and a reputation as a highly accomplished CIO, then you might qualify for an interim consultant position.

because I was unemployable in the traditional sense. I don't think I have the energy to do the startup thing on my own again, but, quite frankly, I'm bored with the whole Wall Street scene and what it encompasses.

Where do I find a situation that will look at my overall success without regard to my lack of formal education? My salary is in excess of \$1 million, and my investment income surpassed that some time ago. I'm not in it for the money at this point. I like to make things happen, and I will only consider a situation where I am surrounded by like-minded people. Where do I find a company that is looking for someone like me?

**A:** You are long past the point at which your lack of a degree, and certainly your lack of certifications, has any relevance to your dilemma. Your track record and accomplishments on the job are clearly what matters now. If you're not ready to retire (which means you will be working hard like the rest of us), don't want to create another startup (which means that you will be working for someone else), don't want to stay on Wall Street and don't need to make \$1 million a year, then I would suggest looking for a CIO or CTO position outside of the finance world. What other interests do you have? Perhaps you are attracted to the arts, higher education, publishing, government or any number of industries.

You are in the enviable position to pick and choose and can trade off on compensation—big time. You will be at a disadvantage, however, against candidates who possess the appropriate industry experience, and there will be those interviewers who will be concerned about your unusual career step and





Now there's a smarter way to manage  
your customer-employee-supplier-partner-  
intra-extra-Inter-cross-platform-global-  
way-too-complex-digital-economy net.



It's one Net. Put it to work.

You can't build success in today's eBusiness world if you can't bring order to a host of complex networks. Order that lets your employees, partners, suppliers and customers work together. And all their different operating systems, intranets, extranets and the Internet work as one Net. Securely and reliably. That's the strength of Novell's Net services software. It lets existing technology work together. And gives you the power to change your eBusiness as fast as the Net economy. Watch it work at [www.novell.com](http://www.novell.com)

**Novell.**  
the power to change



## Career Counsel

It helps if you are known in the business, speak at conferences, are interviewed and quoted in trade publications and so forth. Marketing yourself can be tough, especially while on assignment, so consider aligning yourself with an organization that specializes in pro tem employment or with a consulting company that handles this type of assignment. A couple of the better-known organizations in this space are The Feld Group and Transition Partners.

### WHAT'S WRONG HERE?

**Q:** The reaction I get from supervisors and prospective job interviewers concerns me. They frequently seem intimidated by my background, confidence and education. I am a project manager, currently working on disaster recovery for a government

### Have a career question?

Visit our website at [www.cio.com/forums/executive/counselor.html](http://www.cio.com/forums/executive/counselor.html) and pose your own questions to Mark Polansky.

agency. I'm 50 years old and have 15 years' IS experience that includes programming, networking and systems administration. I am completing a master's degree in executive management and am familiar with both management and technology. I'm preparing myself for a middle management position and will be looking at the CIO position after a few more years. The insecure reaction is an obstacle because it prevents my getting further positions and experience needed to obtain my goals. Do you have any suggestions?

**A:** I wish I could be the proverbial fly on the wall at your interviews and on the job so that I could get some sense of where you are going off track. So let's see what we do know. Clue No. 1: You are getting interviews, so we can rule out your résumé as being problematic. Clue No. 2: You're getting the same response from your superiors as from your interviewers, so it's not an interviewing problem that we are dealing with. Clue No. 3: Those with whom you interact, both interviewers and supervisors, "frequently seem to be intimidated by [your] background, confidence and education." But the word *seem* is in the eye of the beholder, in this case, you. That's where we must look to figure out this problem.

My conclusion is that you may be posturing or communicating an attitude (perhaps superiority) that elicits a negative response from recipients, and you perceive that reaction as intimidation.

Tough as it may be, find someone who knows you, that you respect and trust, regardless of whether you like him or her and what you may hear, and ask direct questions designed to elicit honest answers about your interpersonal skills. This exercise can pay enormously in career opportunities and help you with your upcoming interviews.

### DRESSING UP A DEGREE

**Q:** I read with great interest your opinion in a previous column concerning the MBA degree as a premier path to senior management positions. I am almost finished with a master's degree in executive management that, while lesser known and recognized, has a very similar emphasis. Included are economics, financial systems, marketing, IT management, research analysis, leadership, policy, strategic planning and executive decision making. The basic difference, in my opinion, is when the classes are taught, day or night.

I have considered looking elsewhere for a program that would take my course work into consideration and allow me to add whatever difference to get an MBA. But, "Why bother?" I ask. Short of hiring a PR specialist, how would you suggest dressing up the executive management degree to be the strong credential for management that it is?

**A:** Yes, I have long maintained that the combination of a technical undergraduate degree and an MBA is a prototypical and very powerful combination of educational credentials for a model CIO résumé.

That said, I always focus on the learning objectives, curriculum content and pedagogical quality of any educational achievement when evaluating its significance. Your master's degree sounds like it has MBA-type course requirements, and I don't think you can, should or need to dress it up. You certainly should not be defensive or apologetic for it.

However, you would be well advised to list the program's courses, just as you did for me in your question, in the line that follows the degree on your résumé. Your written or verbal explanation of the program's focus and content will address the bias of the reader or interviewer who is hung up on the letters of your degree rather than on what you've learned, or perhaps not. In the latter case, move on to a more reasonably minded audience. **CIO**

Mark Polansky is a managing director and member of the advanced technology practice of Korn/Ferry International in New York City. He is also the chairman of the Greater New York Chapter of the Society for Information Management. The Web-based Executive Career Counselor column is edited by Web Research Editor Kathleen Kotwica. She can be reached at [kkotwica@cio.com](mailto:kkotwica@cio.com).



PHOTO BY ANDRE SOUROUJON



We provided access to our tools, subject directory, database of Web sites all classified to the subject directory, and an API for servicing the queries – everything Student Advantage Web programmers need to build customized, vertical search engines quickly. Which gives students the tools they need to do online research efficiently and effectively in subjects ranging from anthropology to sociology. It's just another way Northern Light helps businesses and information work together.

NorthernLight.com  
NLResearch.com

Just what you've been searching for.



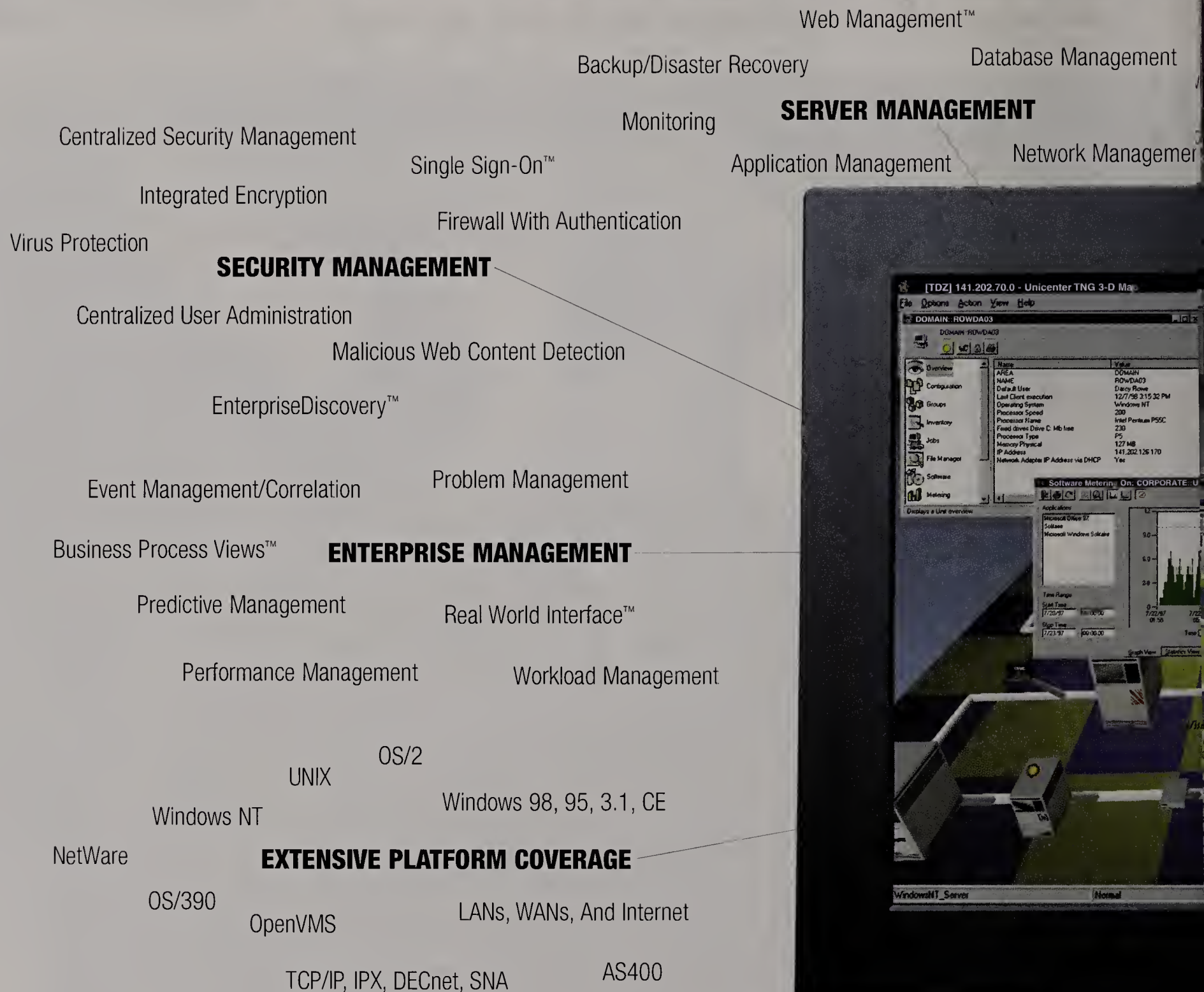
When Student Advantage needed to build an

# ACADEMIC SEARCH ENGINE

for 25 subject disciplines, Northern Light responded.



# Presenting The Industry's Most Comprehensive Desktop Management Solution



**COMPUTER ASSOCIATES®**  
Software superior by design.



# Industry's Only Complete Management Solution.

Session Recording

Multi-Processor Support

Stealth Viewing

Moving Call-Back

Multi-Host Viewing

File-Transfer With Crash Recovery

Note Access

## REMOTE CONTROL

Integrated NT Security

Remote Reboot

Software Metering/Auditing

Software Maintenance

Software Inventory

Y2K Compliance Check

## ASSET MANAGEMENT

Hardware Inventory

Configuration Management

Financial Tracking

Policy-Based Management

Historic Analysis

Hands-Free OS Installation

Roaming Users Support

## SOFTWARE DISTRIBUTION

Broadcasting

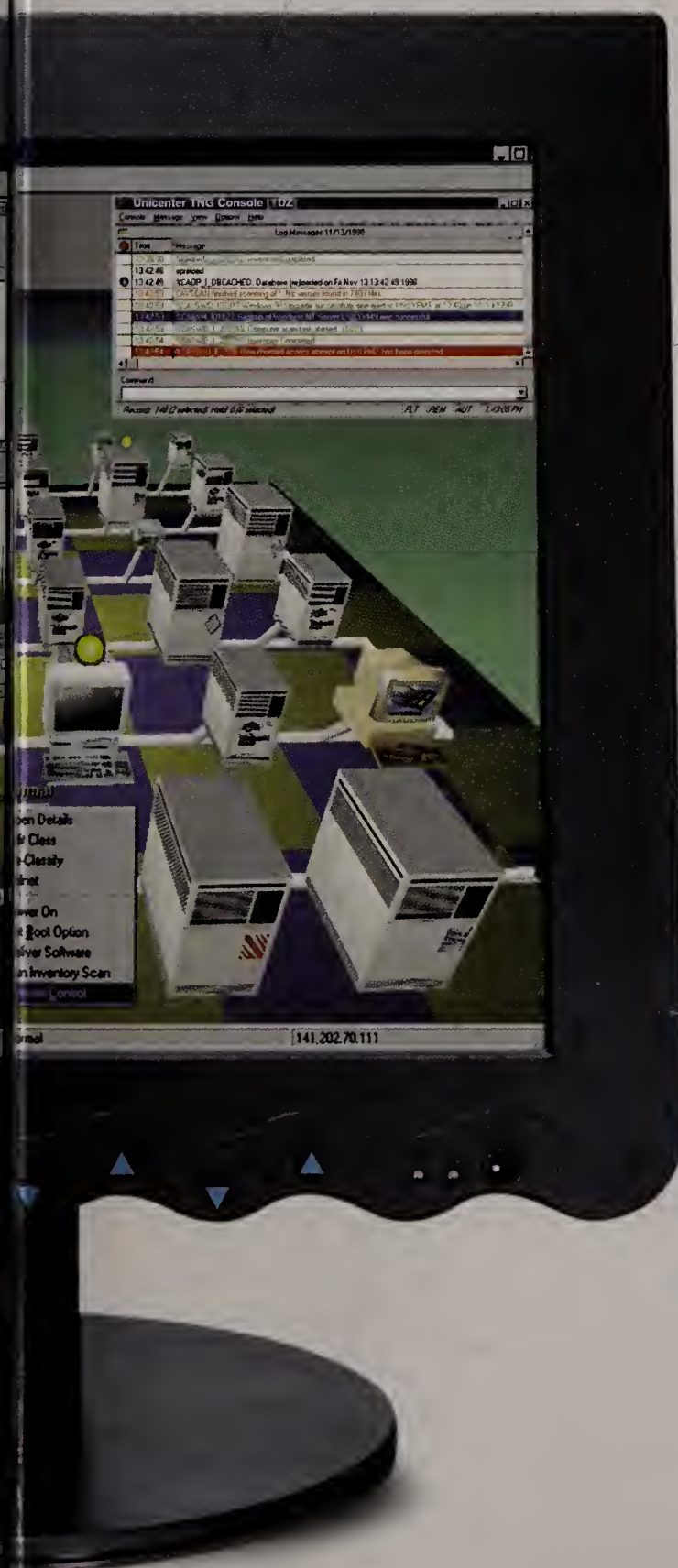
Event Monitoring And Automation

Secure Data Transport System

Dynamic Groups

Push/Pull

N-Tiered Distribution



Yes, all of these features and functions can be found in one solution: And you can find out more by making one phone call. Call today and find out how the industry standard for network and systems management can help you get all of your desktops under control.

For more information, call **1-888-UNICENTER**,  
or visit **[www.cai.com/ads/desktopmgmt](http://www.cai.com/ads/desktopmgmt)**

# Unicenter TNG®



A photograph of a person's shadow cast on a light-colored, paved sidewalk. The shadow is dark and elongated, showing the person's legs and arms. The text "a walk" is overlaid in a bold, yellow-green, sans-serif font. The shadow of the person appears to be walking towards the right, with the text positioned in the middle of the frame.

a walk



See where the potholes and  
speed bumps are lurking

# down STARTUP STREET

**Dotcom startups have** been, and remain, potential paths paved in gold and glory, beckoning everyone—from junior programmers to CIOs. But the fickle stock market has warned dotcom hitchhikers that they're in for a rough ride. The demise of Toysmart.com this past spring shows that even well-publicized companies with capable CIOs like John Puckett can crash and burn.

In our April 1, 2000, cover story, "Wheel of Misfortune?" we warned you to look before you leap to a dotcom. We also made it clear in our June 1, 2000, feature "How I Survived My IPO" that things don't necessarily get any easier after a startup goes public, despite the Wall Street fuel injection.

In this special report on startups, we urge you to hit the city streets of New York with CIO Arthur Tisi, as he leaves the safe environs of the Metropolitan Museum of Art and heads downtown to dotcom startup Circline. He'll share his thrills, chills and disappointments and leave you pondering the sagacity of his ultimate career decision.

Next, hop in the backseat as former eBay IT hero Bob Quinn and Mintu Bachann, new CIO of Equalfooting.com, tour the byways of startup IT leadership, swapping questions and answers on fast growth and high-torque resistance to change.

Finally, take a closer look at the Mighty Quinn's newest ride, startup Portera, and tell us what you think of the company's chances—will it cruise or crack up on the mean streets of the e-metropolis?

—Richard Pastore, senior executive editor

## IN THIS SECTION

### START ME UP

Read up on Arthur Tisi's adventures in startup land.

Page 77

### VIRTUAL MENTOR

CIO pairs a startup newcomer with a dotcom veteran for a help session on leadership.

Page 90

### RATE THE STARTUP

Does Portera have a winning business plan? You tell us.

Page 102



# HEY, HACKER BOY... CHEERS!

## INTRODUCING ESECURITYONLINE.COM

- \* FEATURING THE ONLY ONLINE VULNERABILITY SERVICE CUSTOMIZED TO YOUR NETWORK
- \* OVER 2,200 VULNERABILITIES INCLUDING:  
OPERATING SYSTEMS, APPLICATIONS, DEVICES AND DATABASES
- \* VULNERABILITIES MONITORED, RESEARCHED AND VALIDATED BY R&D TEAM
- \* VULNERABILITIES RANKED BY RISK
- \* CUSTOMIZED ALERTS AND MANAGEMENT REPORTS PROVIDED TO YOU DAILY
- \* LEADING PORTAL/RESEARCH RESOURCE FOR ESECURITY PROFESSIONALS
- \* GO TO ESECURITYONLINE.COM FOR A FREE DEMO





**eSecurityOnline.com**

**SOLUTIONS BEFORE PROBLEMS™**

*An eSecurity Venture of ERNST & YOUNG*







It's been a busy year for Arthur Tisi, former CIO at the Met who went on to try his hand at startup life. See why he is charged and raring to go.

# START ME Up

BY MATT VILLANO

**Arthur Tisi lays big bear hugs** on first-time visitors, disarming them to the point of laughter. Over the course of a normal 10-hour day, he slams back half a dozen bottles of neon-blue Powerade, eats three (sometimes four) containers of fruit salad and checks his e-mail at least 40 times. During meetings, he treats the conference table like a set of drums, thumping the floor with his feet while tapping the tabletop in syncopated rhythm. At lunch, he blows off steam with what he calls "retail therapy," impromptu jaunts to the designer stores that line Madison Avenue, in search of stuff he says every self-respecting man should buy—shirts, slacks, Mont Blanc pens and the occasional ring for the missus.

This kind of psychological release is important during a stressful day," he offers with a swipe of the plastic, attempting to justify his typical hour-long shopping extravaganzas. "You'd be amazed at how critical it can be to productivity and overall state of mind."

#### Reader ROI

- ▶ Learn how the CTO role differs at a startup
- ▶ Discover what it takes to thrive in a startup environment
- ▶ See what can happen when you follow your dreams



**t HIS IS THE WORLD ACCORDING TO TISI:** frenetic, impulsive, driven, hyperproductive and fun. With his mop of corn-colored hair and his hobby of writing, recording and producing music, the 37-year-old seems more equipped to catch a wave than he does to program SQL. Still, Tisi delivers. For seven years as CIO at The Metropolitan Museum of Art, he directed technological innovations that changed the staid institution forever, establishing the organization's first-ever network, developing a collections management system and launching the museum into cyberspace. Then, this January, Tisi changed gears completely and moved to Circline, a for-profit dotcom where he built an IT team from scratch, shaped the company's e-commerce website and honed proprietary technologies that enable dealers to buy or sell art from anywhere in the world.

In moving to Circline, Tisi seized an opportunity to build an IT team the way he wanted and to work with new people, technologies and challenges. Over time, however, he realized that the vaunted culture of flat hierarchies and breakneck work ethic wasn't all it was cracked up to be. Tisi wanted a more creative environment, an atmosphere he could shape in his own image and a culture to call his own. Ultimately, with perseverance, motivation and an entrepreneurial spirit, he achieved his goals. What a long, strange trip it's been.

### A Job Dreams Are Made Of

Tisi began working in nonprofit IT in 1993, when he was hired as CIO at the Met, the largest art museum in the Western Hemisphere. After several years of running IT in health care, the position at the Met was literally a dream come true. As a child growing up in the Bronx, Tisi had visited the museum frequently and says he had always been in awe of the amount of creative genius amassed in one place. When the museum's search firm contacted him about the CIO job, he says, he "nearly yelped in excitement." Eight weeks and 14 interviews later,

the CIO job was his, complete with a spacious office that was located in the mezzanine of the Michael C. Rockefeller wing.

Tisi inherited an IT staff of about 50, and as he began to add fresh blood he launched a broad, multimillion-dollar platform of initiatives to modernize the museum's IT depart-



ment curators track the millions of artifacts the museum owns. Perhaps his most extensive achievement of all, however, was the organization's website ([www.metmuseum.org](http://www.metmuseum.org)), a virtual exhibit hall where users can log on and view 3,500 of the institution's most popular pieces from the privacy of their own homes. To date, the site registers hundreds of thousands of visitors every month.

"He really put us into the modern age," says Daniel Berger, a consultant to the museum's sales division, who was a manager of merchandising during Tisi's tenure. "He convinced the executive area of the institution that the future would be better served by going cautiously but steadily forward in the areas of data processing and computing. [Tisi] changed this place forever."

As with any organization as prestigious as the Met, many of the museum's leadership structures were complex, and Tisi quickly learned that this culture required special handling. Instead of simply going off and purchasing new technology on his own, Tisi had to build a consensus, obtaining approval

**"The notion of A FLAT STRUCTURE is admirable, but I think you'll find that it DOESN'T ALWAYS WORK, and I think startups can be particularly prone to this sort of challenge."**

—Arthur Tisi

ment for the 21st century. He upgraded the institution's network from two IBM mainframes to a single, smaller mainframe with client/server technology. He built out a network of over 40 applications and file servers running Microsoft Windows NT and Microsoft SQL Server. He replaced the museum's antiquated financial system with Lawson Financials on HP-UX and Sybase. He installed a proprietary Visual Basic/SQL Collections Management System that lets

from numerous groups first. He says this turned ordinary procurement efforts into structured transactions and notes that while these processes were usually rewarding, many of them ran for months at a time.

Like any good leader, Tisi learned to work within the confines of this environment, adjusting his professional expectations accordingly. But after seven years, the everyday became banal, and Tisi was ready for something new. He began to wonder what





— *for call centers* —

**SURVIVAL MEANS MORE THAN JUST SENDING THE MESSAGE.**

BackWeb® ensures your call center's mission-critical data is not only delivered, but instantly noticed. BackWeb's patented Polite™ Push technology sends any type of information— product updates, promotions, or competitive offerings— over any connection, without impacting the network. Then a BackWeb Flash animates the message,



commanding immediate attention. And it all seamlessly integrates into your current IT infrastructure, which is one reason BackWeb is used throughout Global 2000 companies. Download a white paper that details how BackWeb can accelerate the way your call center operates: [www.backweb.com/eaccelerator3.html](http://www.backweb.com/eaccelerator3.html) or call us at 1-800-863-0100.

*What Pushes e-business*

Among the many companies using BackWeb: BELL ATLANTIC MOBILE, COMPAQ, FIDELITY INVESTMENTS, HEWLETT-PACKARD, ROBERTSON STEPHENS



else was out there, and last summer he started interviewing at some dotcoms to get a feel for how the industry had evolved. At the same time, the Met unveiled its new website, and Tisi felt it was a logical jumping-off point for a new opportunity. He didn't know where he wanted to go, only that it was time for a new job where he could have a different yet positive impact.

"Where are you going to go after you work at the Met?" he asks rhetorically. "You can't get much better, that's for sure. I was pretty much prepared to accept the fact that no matter where I went, it would be an entirely different experience. On every level, in every sense of the word, I was ready for something new. It was just a question of finding it."

Tisi lands at Circline in November 1999, after being considered for CIO positions at Sotheby's and Christie's, Tisi stumbled on Circline, a 2-year-old startup that brokers hard-to-find artifacts and accessories online. He liked the company right away, particularly because it eschewed the trendy online auction model in favor of a unique, community-oriented medium for commerce. He says that with a bright group of leaders and seemingly committed investors, the company piqued his professional interest because "it was trying to change the marketplace for the better" and was not doing something that he considered to be "emotionally shallow." What's more, he was intrigued by CEO Sean Mast's promise of equality, a flattened business atmosphere where everyone was on level ground. This was a culture that Tisi had always admired, and he was curious to see if it could exist.

Mast offered Tisi the job of vice president and CTO, and Tisi made the switch in January 2000, becoming the first to join Circline's IT department. On the second Monday of the month, he came in to the company's Park Avenue office, set up his desk—a folding table in the corner—and jotted down a basic plan for building the department. First on the list was hiring a brand-new team of IT employees, and Tisi met this challenge with abandon, recruiting



10 staffers by May 1. Tisi secured these new employees desks just like his, clustered the workstations in the corner near his spot, then kicked off a multimillion-dollar plan to build out the company's e-commerce website ([www.circline.com](http://www.circline.com)) and to release an intranet for members. Tisi also began to

implement a strategy for a massive database project staged over multiple clustered servers. He was so optimistic about these programs that he scheduled both facets for completion by Sept. 1. Mast and the investors were delighted.

During those early months, Tisi embraced





“At the Met, Tisi was **AN MTV MIND IN A PBS WORLD**. At Circline, he was much more in his element in terms of professional freedoms.”

—Lisa Del Percio, assistant to Arthur Tisi

“At the Met, [Tisi] was an MTV mind in a PBS world,” she says. “At Circline, he was much more in his element in terms of professional freedoms.”

Tisi’s plan for the website and the intranet was just the beginning. He and his team members were literally building Circline’s IT department from nothing, and every day they met with vendors that claimed to sell software that would augment different aspects of the business. On a brilliantly bright day in early spring, team members discussed content management software with salespeople from Austin, Texas-based Vignette Corp. and customer relationship management software with representatives from Siebel Systems of San Mateo, Calif. The meetings were long and tedious, but Tisi remained focused. By noon, he was ready for some retail therapy and a stroll around midtown Manhattan.

“For me, being chief technologist is wonderfully rewarding and incredibly challenging at the same time,” he explains. “On the one hand, I’ve got my hands in everything, and I can pick and choose the technologies that I like, building this department the way I want to build it. On the other hand, since there’s so little margin for error, it’s my credibility on the line if something goes awry. That degree of accountability and scrutiny can have quite an impact.”

### On to Bigger Dreams

Eventually, observations such as this one compelled Tisi to seriously consider starting his own company. Tisi had dreamed of running his own business for years, and his father, always a huge influence, was encour-

aging him to become an “employer, a teacher, a creator” of his own. These thoughts of something more did not exist in a vacuum; the longer Tisi worked at Circline, the more committed he became to developing his own corporate culture. At the Met, he says, officials gave him leeway on projects and expenditures because they trusted that implicitly he knew more about IT than they did. At Circline, however, Tisi hints that there are times when the complexity of the tasks at hand call for many opinions, sometimes preventing a clear strategy. He adds that traditional organizations generally display more respect for technology executives, noting that “new media companies see us more as utilitarian figures who happen to know a little IT.”

When asked to explain why he hired Tisi, Mast says he was looking for “a technologist who could partner to develop the strategic vision of the business.” He says he chose Tisi because of his “tech savvy and strategic know-how” and insists that he recognizes the IT department as not just a “way to get stuff done without a typewriter” but instead as a valuable and equal part of the business. “Technology is a core fundamental part of making a business successful in the short and long term,” Mast says. “You can’t hand that off to someone who’s not a thought partner on the senior management team. We feel [Tisi] is a perfect fit.”

Tisi appreciates the notion of being a perfect fit, saying the laid-back and nurturing leadership style that he prefers is only now being adopted by many startups burned out on a breakneck and sometimes rudderless pace. Sure, some CIOs might see the fast-

a number of aspects of the new atmosphere. At Circline, once Mast signed off on something, it was done, no questions asked. Lisa Del Percio, Tisi’s administrator for office automation for the past two years at both the Met and Circline, says that for Tisi, this streamlined process was a refreshing change.



paced life at a fledgling company as enthralling, challenging and exciting. Even Tisi admits that he likes to get things done quickly and seamlessly, without hesitation. But he suggests that startups such as Circline can often push too hard, resulting in organizational stress. "Certainly, organizations mean well, but there is a need today for a personalized management style based on the best way to get each team member to respond," he says.

### Keys to a Company's Success

Tisi believes that creating an engaging culture and clear lines of communication is also very important to a company's success. At the

ating a sense of ownership for one person can create conflicts with another. In other words, when employees are expected to do something they don't feel comfortable doing, Tisi says the lack of defined responsibilities sometimes creates tension and awkwardness.

"In *Animal Farm*, all animals are equal, but some animals are more equal than others," he says. "I think that applies to all companies, too, because you need structure. Some people are natural leaders. Others are natural followers. Putting everyone on equal ground conflicts with human nature. The notion of a flat structure is admirable, but I think you'll find that it doesn't always work, and I think startups can be particularly prone

indicates that a deeper perspective on the notion of equality needs to be developed," he says. "At any startup, there are competing interests for a CEO's time. One of them is the issue of developing a culture, the second is the product and the customer, and the third is financing. It's difficult to make sure these requirements get equal time and commitment. Sometimes, some of them fall by the wayside through nobody's fault."

Based on these reservations, Tisi decided to give notice to Mast and COO Rachel Meyer earlier this summer. The duo was shocked. To this day, neither Mast nor Meyer will comment on Tisi's decision to leave. His staff took the news a bit better; Del

Percio says that for the most part, "everyone realizes [Tisi] would be happiest doing his own thing." Del Percio herself also has given notice, saying she'd follow him wherever he goes and that he's the greatest boss she's ever had.

Still, Del Percio insists that despite Tisi's feelings about the startup culture, which he experienced at Circline, the startup environment is still the right fit. Donna Duca, who's worked with Tisi since 1994, adds that the real-time atmosphere of a startup suits him well because

there's nothing to slow him down and because "he can be himself, without all of the politics." Duca, who helped Tisi switch from mainframe to client/server at the Met, says that when he left the Met, "the [IT] department got really stale." She adds that when she arrived at Circline as database manager, "it seemed as if [Tisi] had made himself at home right away, [and] the lack of an overarching bureaucracy, provided him with a freedom" it appeared he hadn't felt in years.

Tisi agrees. "There was a lot about Circline that I admired and enjoyed. In fact, I believe it is an excellent company with incredible potential and good leadership. In the end, I didn't leave Circline because of Circline. I left because the only way for me to



Met, every job from CEO down to programmer came with a published job description—employees were expected to perform only the tasks in that description, and those who went above and beyond were rewarded for their efforts. At Circline, Tisi says that because the company is growing so quickly, few of the jobs have descriptions. He says these jobs need to be better defined in order to create an environment where expectations are understood across the board.

As Circline exists today, this arrangement can sometimes foster a sense of ownership, encouraging employees to share opinions with management, extending and amplifying the entrepreneurial nature of a startup. On other occasions, however, Tisi says that cre-

ating a sense of ownership for one person can create conflicts with another.

At Circline, nowhere is this problem more evident than in the area of procurement. On another spring afternoon, members of Tisi's IT team were discussing the merits of a vendor Mast had selected some time ago, and someone listed four or five legitimate reasons why Circline should drop it. Tisi agreed with this staffer's reasoning and encouraged her to take her findings to Mast, explain them and present him with a list of viable alternatives. At the mere suggestion of this, the staffer clammed up, refusing because she said she didn't feel comfortable going directly to Mast. She asked Tisi to do it instead.

"The mere fact that this person didn't feel comfortable working directly with the CEO



A photograph of three business professionals—a woman on the left, a man in the center, and a man on the right—holding a large white sign that reads "WE ARE SMARTER TOGETHER." The background is a blurred office setting.

# WE ARE SMARTER TOGETHER.

We are economies of scale. We are speed to market. We are InVerge<sup>SM</sup>—the first universal platform for online transaction services. Our streamlined technology sets the standard for delivering services to businesses over the Internet. And the InVerge platform brings businesses together for unimagined intelligence and efficiency. To learn how to make your business better with every transaction, visit [www.inverge.com/demo6](http://www.inverge.com/demo6).



Partner for Better eCommerce.<sup>SM</sup>

CYBERCASH

CyberSource

firstLOGIC



ICOMS



VeriSign

vertex



be truly happy was to do something more entrepreneurial. I came in one day and realized that if I was going to work to create a certain culture with my team, I didn't want to create it on someone else's terms. I wanted to start over and go at it on my own."

### A Company to Call His Own

Empowered by this epiphany, Tisi began writing a business plan for @Thought Technologies ([www.attthought.com](http://www.attthought.com)), a company he first envisioned during his days at the Met. In it, he outlined an application service provider and strategy company that would serve nonprofits—organizations that historically have not been able to afford sophisticated technology on their own. With a proprietary, Web-based technology called PublicSeat, which Tisi has already built, @Thought will enable organizations of all shapes and sizes to integrate front-end and back-end IT to get more out of their data. Tisi foresees the service empowering organizations to answer questions such as, How many members also buy things in the gift shop? How many Web visitors also attend monthly events?

Like King Solomon, with significant first-round funding and more than 1.3 million nonprofit organizations in desperate need of new technology, Tisi is sitting on a veritable gold mine. Yet in his inimitable style, this father of three cares as much about creating an environment and business processes that make @Thought a place where people love to work as he does about the potential revenue. After more than 15 years of working in someone else's corporate culture, he is most excited about the opportunity to shape a business environment in his image—a place where "creative people can come together, think and thrive" as both individuals and professionals.

"I didn't start this to build a place for people to just get rich quick; it's deeper than that," he declares. "I did it because I have great respect and admiration for the public sector, and I want to create the kind of corporate culture I've wanted my whole life, a place that does good things for good people and enables

everyone involved to grow. Startups try to offer all that, but inevitably, they fall short. It shouldn't have to be that way."

Tisi plans to be CEO and CTO of this new endeavor and envisions creating an entity with a distinct line of command, flexible work schedules and, perhaps most important, a process that ensures technology will always be an important part of the overarching business strategy. "I know [@Thought] is a wonderful opportunity to get things right," he says. "I've spent my whole career working for other people, recognizing what works, what doesn't work

and how I can make things different. All of those experiences, all of my ideas, all of it adds up to this. I had to make it happen."

Since he left Circline, Tisi has been working on @Thought full bore, lining up funding and securing deals, so that he can jump right in to life as a CEO. When asked how he'll endure the transition from CTO, Tisi acknowledges that although the roles are similar, they're different enough to present some challenges (see "A CEO's To Do List," this page). He knows, for instance, that he'll have to spend dozens of hours raising money every week, diverting attention from both

## A CEO'S To Do List

**Two months into his new venture, new CEO Arthur Tisi has his work cut out for him. These are just some of the highlights.**

**Get funding.** Funding, perhaps the most important piece of any startup puzzle, is the key to bigger and better things. Tisi says he's spent weeks lobbying venture capitalists for money and says he'll continue to work to secure funds until he has an ample supply in the bank to provide nonprofit organizations with the technology and strategy they need and donate to the nonprofit community at large.

**Woo customers.** No matter how much funding a company receives, that company is nothing without a broad customer base. Tisi plans to spend most of his spare time between now and Christmas securing new nonprofit customers; including a variety of organizations, such as The Metropolitan Museum of Art and smaller, more localized organizations.

**Hire, hire, hire.** Good people make for good companies, and Tisi is committed to attacking this task with the same vigor he attacks financial concerns. First, he plans to recruit from a broad base of colleagues and friends—people he says are leaders in their respective disciplines. Then, he says, he'll probably go the way of search firms, retaining top-level organizations to find people who share his approach to corporate culture.

**Pay attention to detail.** Tisi says he plans to ensure that the environment at @Thought remains upbeat, nurturing and positive. By opening offices in Manhattan and in upstate New York and offering perks such as flex-time and child care, he hopes to make life easier for staffers with families. Through weekly one-on-one meetings, he intends to stay in touch with all of his staffers. Stay tuned.

—M. Villano





AS YOU HIKE DOWN A ROCKY TRAIL,  
YOU COME FACE TO FACE WITH A 1,200 POUND GRIZZLY.  
IN A SPLIT SECOND, YOUR LIFE FLASHES BEFORE YOUR EYES  
AND YOU REALIZE THAT TWO-THIRDS OF IT WAS SPENT  
WRESTLING WITH YOUR NETWORK.

MAKE NetSolve YOUR REMOTE NETWORK MANAGEMENT PARTNER. WITH OUR COST-EFFECTIVE SOLUTION, YOU'LL HAVE AN EXPERIENCED TEAM OF IT PROFESSIONALS TO HELP YOU DESIGN, IMPLEMENT, MONITOR, MANAGE, AND EVEN RESTORE YOUR NETWORK. SO YOU CAN FOCUS ON STRATEGIC ISSUES, LIKE NOT BECOMING A CHEW TOY.

99.5% AVAILABILITY GUARANTEE   THOUSANDS OF NETWORKS SERVED   PROVEN SINCE 1994  
WEB-ENABLED TOOLS   24/7/365 REMOTE NETWORK MANAGEMENT   1.800.528.3981



NETSOLVE®  
YOUR REMOTE CONTROL™

[WWW.NETSOLVE.COM/CIO](http://WWW.NETSOLVE.COM/CIO)



IT and the new culture he hopes to create. He understands he'll have to worry about human resources, marketing and even the occasional customer pitch. Tisi insists he can handle these responsibilities with aplomb and says he's prepared to invest his heart and soul into making @Thought a place "where people grow as professionals and love to work." Still, experts warn that not every CTO is cut out for the top leadership role.

"The transition can be tough for even the brightest people," says David Foote, managing partner at Foote Partners, a research and advisory company in New Canaan, Conn. "Sure, CTO and CEO are similar, but they're different enough to create quite a learning curve."

So far, though, Tisi seems to be handling the switch well. He says he's received verbal commitments from a number of large nonprofit organizations to sign on as clients and written agreements from a bevy of vendors to help provide best-of-breed relational systems for the back end. The funding has also gone well; Tisi says there are ample financial resources available for his

## Looking Back

On an overcast Friday, finishing up some last-minute errands before meeting his wife for dinner, Tisi reflects on his journey from the Met to the land of startups, both Circline and his own. He calls the experience challenging and awesome and likens the transi-



more about how people like their jobs than any other single employment issue. When asked what other CIOs might learn from his experiences, Tisi waxes philosophical, pausing dramatically before ripping into an answer that makes his voice crack and his face turn red.

"I think a lot of CIOs wish they could change their situations, but they just don't know how," he says. "It's no big secret, just get motivated. There's not that much difference between somebody who does something about their situation and somebody who does not, except that the person who acts has the courage and conviction to do what he thinks is right. CIOs don't have to settle for the status quo. They don't have to settle for some sort of secondary role in the business. If you want new technology, if you want a change in culture, heck, if you just want something different, make it happen. The days of IT as an understudy are over. It's time to make a difference."

With that, Tisi peers out the window of his Lincoln Town Car and watches the shops of Madison Avenue zoom by. He fiddles with a Mont Blanc pen he's just bought for his 8-year-old daughter. He tugs on the power locks. Then, in typical Tisi fashion, he launches into a discussion on topics varying from Microsoft and the Justice Department to a recent article in *The Chronicle of Philanthropy*, then finally delivers a personal history of the upper Bronx from 1965 until the present. I, sitting quietly next to him and furiously scribbling notes, think to myself that in many more ways than one, this has been quite a ride. **CIO**

**"CIOs DON'T HAVE TO SETTLE for the status quo. They don't have to settle for some sort of secondary role in the business. The days of IT as an understudy are over. It's TIME TO MAKE A DIFFERENCE."**

—Arthur Tisi

fledgling concern. It's too soon to tell whether @Thought will be a success, but already, in Tisi's eyes, the simple acts of setting it in motion have been fulfilling.

tion to the 1999-2000 New York Yankees—"exhausting, exciting and unforgettable." He wonders aloud about his obsession with workplace culture, admitting that he cares

What's keeping you from following your dreams? Let us know at [letters@cio.com](mailto:letters@cio.com). Matt Villano, a freelance writer based in New York City, can be reached at [mjv@whalehead.com](mailto:mjv@whalehead.com). (For a first-person account from the writer's perspective, see "Reporter Dispatch," Page 203.)



# Dangerous eVolutionary.™

John Chen doesn't believe in wasting time. In just three years, he has reshaped Sybase to become a leader in Enterprise Portals and mobile computing. Sybase works with a Who's Who of the Fortune 500, implementing e-Business solutions in mission-critical markets like banking, securities trading and telecommunications.

#### Via the net. Using Niku.

Powered by the eNiku solution, Sybase Professional Services are building Enterprise Portals that allow global enterprises to integrate their diverse, worldwide organizations via the Web. And with Sybase's expertise in mobile computing, an enterprise can extend its reach to any user anywhere.

Niku represents a new generation of Internet-based enterprise application software designed to manage the business processes and leverage the intellectual capital in today's service organizations.

Learn more about Niku solutions for IT consulting, Internal IT, legal and other professional services at **[www.niku.com](http://www.niku.com)** or call toll free at 1-877-846-6458.

Internet Keyword: **Niku**

**Transforming  
the Service  
Economy**

**John Chen**  
Chairman, President  
& CEO, Sybase, Inc.

**NIKU**™



# SEIZE YOUR OPPOR



SEIZE THE ADVANTAGE.™

THE DIGITAL FUTURE IS MOVING FASTER THAN YOUR place is before you. With a clear vision of your e-business continuously anticipating the ever-shifting marketplace advantage with integrated e-business strategies, processes



# YOUR OPPORTUNITY.



**WE CAN SEE.** The opportunity to define or refine your position in the digital market-  
strategy and solutions, you can accelerate your decision-making and implementations while  
with **COHERENT SPEED™**. As your consulting partner, Clarkston-Potomac helps you seize the  
and technology solutions. Seize this opportunity: [www.clarkstonpotomac.com](http://www.clarkstonpotomac.com) or 800-652-4274.









# VIRTUAL mentor

CIO teams a dotcom veteran and a startup newcomer for a help session on leadership, including dealing with politics, coping with rapid growth and ensuring 24/7 uptime

BY STEWART DECK



## M. MINTU BACHANN

Since December 1999 Mintu Bachann has been CIO of startup Equalfooting.com, helping the B2B e-marketplace for small businesses launch three sites for purchasing, financing and shipping. He built its IT department from two people to 85 in just three months and anticipates that number to double by his first anniversary. Prior to joining the startup, Bachann was a senior principal and director of the architecture group at Oracle. He has consulted for Sun Microsystems and designed enterprise architecture for NationsBank (Bank of America), Barnett Technologies and the Institute for Artificial Intelligence (AI). Bachann holds a doctorate in AI and computer science.

**As a high-school kid** in the early 1980s, Mintu Bachann wanted to find after-school work that was a little more exotic than flipping burgers. He was intrigued by his uncle's computer consulting business, so he went to work there changing tapes, looking over cards and codes, learning Cobol and entering data. Last winter Bachann made a similar decision to pursue something more colorful, this time leaving the Fortune 500 environment for the CIO position at Equalfooting.com. He got all the color he bargained for and more. In the face of exponential growth, he must draw a rational road map for technology and site development while ensuring 24/7 site availability. It may sound like a perpetual Maalox Moment, but there are strategies that can pull a startup CIO through these most interesting times. Bachann got together recently with Bob Quinn, former CIO of eBay and now CIO at 2-year-old dotcom Portera, to discuss leadership.



## ROBERT QUINN

Bob Quinn signed on at eBay in June 1999, when the company was frantically looking for a CIO after suffering its first outages. Quinn set up high-availability site architectures and built standard processes for site management, improving uptime by orders of magnitude. Early this year, Quinn left eBay for the CIO post at Portera Systems, a vertical service provider that hosts application suites and e-business services for the professional services industry. (For an analysis of Portera, and to cast your vote on its chances for success, see "Rate the Startup," Page 102.) Prior to eBay, Quinn spent 11 years at Sun Microsystems, where he ran the IT organizations in several divisions.





## Stepping into It

**Bachann:** Bob, what did you find when you walked into eBay as CIO, and what did you initially do to enhance the company?

**Quinn:** When I went into eBay, it was in Internet startup mode and had some very good technical people who just wanted to go off and do things. They didn't necessarily want to work with other people, and they liked the fact that the [company was] small and didn't have a lot of processes and procedures. I quickly found that there was a need for processes and procedures. But what worked in larger and more stable compa-

nies would bring everything at eBay to a grinding halt. So I melded the old and the new. I took the best of what we knew about system development and project methodologies and established quick, streamlined templates for project initiation and status tracking. I set the agendas for project meetings, realizing they had to be fast because people didn't have the time or attention to sit through two-hour meetings.

I tried to assimilate myself into the group and focus on an appreciation of what they had accomplished and what their challenges were. Historically, I've seen people come in

and the first thing they do is indicate all the flaws they see with the current environment. That derides the people who've been there and lived through something. When I came into eBay, people had their tails between their legs; they were really beat up in engineering and site ops because of the problems they were having. A lot of laypeople didn't understand the challenges involved. Some of it had to do with the fact that they had to mature as a function, but it was also caused by the fact that they were growing so tremendously fast. I made sure they felt I had an appreciation for that. In the first all-





## Knowledge is Power. But Speed Wins the Race.

Project Office™ brings new velocity to the realm of managing projects. Our innovative software solution helps you quickly automate the delivery of products and services to your clients. See every project in your organization and how your workforce is being utilized – along with budgets, resources, and deadlines. Project Office is easy to use so everyone in your company can absorb the vital information they need in an instant. Then adjust. Project Office is the catalyst for conducting intelligent business. It helps you bring products to market faster and maintain the fluidity and rhythm to keep pace with change. Visit our website [www.pacificedge.com/power](http://www.pacificedge.com/power) for an astonishing demonstration CD that will show you how to accelerate your projects at the speed of the internet. Or, call 425.897.8800.

**Know what's going on.**



803 Kirkland Avenue, Kirkland, WA 98033  
Project Office™ is a trademark of Pacific Edge Software, Inc. © 2000, all rights reserved.



hands meeting, I said, "The biggest problem you have is that you've been tremendously successful. This problem is an outcropping of your success. What you have to do is accept that success is good, but it brings change."

**Bachann:** When you started putting procedures and methodologies in place, did you meet resistance or resentment?

**Quinn:** Yes, there were quite a few tree huggers. In fact, the most talented and most technical people were the ones who hugged the hardest. It's a very common situation for a new CIO to come into. So I focused on them individually and tried to sort each of them into several groups. There were (1) the people who bought into my role and my agenda, (2) the people who bought into my role but not necessarily my agenda, (3) the ones who agreed with my agenda but didn't like me, and (4) the ones who were totally against me and my agenda.

You don't want to expend too much energy on that last group because it may not be possible to win them over. For Group 3, I'd go over and ask their opinions, go to lunch with them, build a personal relationship and affinity with them. For Group 2, I tried to engage them in helping to define the new agenda. I'd say, "These are the problems we need to solve. Can you put your spin on how we can do this?"

This isolates the No. 4s, and they see pretty quickly that they need to get on board.

**Bachann:** What are some other potential pitfalls of fast growth?

**Quinn:** You can't let the environment define you. At eBay it seemed like many days I'd say, "Wow, I had all these plans, and I didn't get to any of them." It took control of my life. After a few weeks of that I realized I had to take some level of control and get away from the reaction mode that this environment was throwing me into.

**Bachann:** What was the first thing you did to get that control?

**Quinn:** I had my admin put a fictional "John Smith" on my calendar to carve out blocks of time so that I could go somewhere and focus on what I wanted to accomplish that day. I also put together a tight list of high

priorities that I needed to be addressing and spending time on each week, and I'd go over that list in a weekly status check. So every week I'd look at both far-reaching goals and what I had to do next week.

### Streamline and Specialize

**Bachann:** In order to achieve your goals, have you set or applied a chain of command or streamlined your organization?

**Quinn:** In smaller companies, you have to flatten the organization and have more direct reports with more specializations. One of the most challenging things in recruiting is when I talk to people who have lots of skills who want to run the whole shop. I tell them that when you're maintaining a house it's OK to

have a handyman who can do plumbing and electrical and odd jobs. But when you're building a house, or a startup, you need people with focus. You need senior people who can build a network operations center and someone else focusing on building the technical support function and someone else on network engineering. So I looked for more senior people and segmented them, saying, "You're going to own operations. Yes, I know you've managed people before, but you're going to have your hands full."

Mostly I looked for people who had worked in different environments. Some people who come from Fortune 500 IT shops just can't make the transition to the Internet space because they're used to relying on a lot

## MENTOR **checkup**

Four months ago, Eugene Rindels, CIO at medical device maker Respiroics in Pittsburgh, was working through tough times trying to influence his peer function leaders to embrace change while also securing his own role as an accepted fellow strategic leader of the company. He talked with Richard Fishburn, CIO of Corning, identifying ways to promote common passions in his colleagues and how to balance control of the department with the need to spend more time with the business leaders (see "Virtual Mentor," CIO, April 1, 2000). Today Rindels reports that things are looking up. He's spending more quality time with Respiroics' president, and he and his IT directors are more accepted as strategic partners of the business unit heads. "It's far more of a mutual forum than it has been in the past," Rindels says. The reason for the improvement is a better appreciation for IT's importance and accomplishment now that the other officers have seen IT initiatives bear fruit. And it's also an increased effort on IT's part to talk about business in business terms. Rindels, taking to heart Fishburn's advice that you are what you spend your time on, has shifted his visibility away from the IT department toward the senior company leadership, estimating that he now spends about 85 percent of his time with the business heads versus only about 40 percent in the past.

Despite the progress, Rindels says that 100 percent success in forging a strong working relationship and understanding between IT and the business units hinges on the business unit having a clear line of site to IT expenditures. Whether that means a chargeback scheme or some other mechanism, Rindels isn't sure. He's collecting data now to help figure out the best strategy. "These are complex undertakings you don't roll out in a day," he says, "but we'll have to go to some sort of distributed accounting for IT resources."



Success comes from anticipating your customers' needs before they do.



**PeopleSoft Customer Relationship Management** is about knowing what your customers want – even before they do. By tracking your customers' behavior and history, PeopleSoft's new generation of e-business applications gets information into the hands of the people in your company who need it, when they need it. Now, armed with Vantive's best of breed CRM technology, everyone can proactively forge and develop profitable customer relationships like never before. Which is exactly the competitive advantage your people need to successfully lead your business.

PeopleSoft CRM powered by

**vantive**

CUSTOMERS • EMPLOYEES • SUPPLIERS

People power the internet.™

**PEOPLE**  
*Soft*



of infrastructure. They don't know how to come in and define a lot of their objectives and manage their time between short term and long term.

**Bachann:** We have a lot of bright and talented people who believe they can do lots of things. How do you establish a strong working relationship with them, and what was the reaction when you started streamlining their responsibilities?

**Quinn:** I told folks that I could give them three functions, but then the likelihood was that they weren't going to nail any one of



**Quinn:** When I go into a company, I design in what my measurements and metrics are going to be. It can be availability and performance and response time and how I'm going to measure and track those, or budget versus actual figures. I put together that package and then hire someone who just follows those measures so that we have a scorecard that we're monitoring closely. The facts won't lie as long as you're looking at the right facts.

**Bachann:** What do you think the company and the board looks to a CIO for? Do you evaluate your success from what you think their perspective is or from strategic and tactical directions you've set up?

**Quinn:** Do you mean how *I* think *they* think I'm doing?

**Bachann:** Right.

**Quinn:** I am paranoid (laughs). Every CIO I've met who I think is really good has a certain degree of paranoia.

What ends up happening at every single job I've gone into is this: They say in the interview process, "Things aren't so good, and that's why we need you." And then you get there and within a week that's all forgotten. Then the fact that there are problems is your problem. What I've found is that it's an uphill climb. You find yourself in the swamp and you have to figure out how to drain the swamp without getting eaten by alligators.

**Bachann:** And there are plenty out there!

**Quinn:** From the time you are in the swamp you are *in the swamp*, and they view you as being in there. And success depends on whether you're getting any drainage or whether the swamp is overcoming you.

### Three Weeks Later

In a second meeting, the two startup CIOs switch roles as Quinn asks Bachann's advice on staffing.

**Quinn:** I'm in a situation now where I'm trying to build a team from scratch very quickly in a tough job market. I'm running into two dilemmas: some young, technically oriented people here have never worked in a big company before. They have a good

## "SUCCESS DEPENDS on whether you're getting any drainage or whether the SWAMP IS OVERCOMING YOU."

—Robert Quinn, CIO, Portera Systems

them. They'd be juggling responsibilities across the three functions and not getting much accomplished. Then I'd say, "Or you can focus your talents in one area, accomplish something that moves this business forward and is more mission critical to the business success than what you experienced in a Fortune 500." That worked. It appealed to people's sense of success instead of their sense of personal achievement.

### Up All Night

**Bachann:** One challenge of operating a Web store that's open 24 hours a day is making sure it *stays* open 24 hours a day. What do you do to ensure that?

**Quinn:** I carry a pager and a cell phone wherever I go, and I came to the realization early on that being a CIO is what I am for life, not just eight hours a day. And when I do take a break, I always have very clear, responsible backup. I've gotten to the point (and my wife understands it) where I can't just leave town. Our schedules and things are very tied to the site. If it's a mission-critical site operating around the clock, you've got to

get to a 24-hour onsite monitoring capability, and you have to hire people who are willing to carry that pager and get up quickly in the middle of the night and respond to it.

At eBay I made certain to get high-availability server clustering and redundancy in place with automatic failover on all major components. That is the main reason eBay isn't having problems anymore. They didn't have redundancy, and they figured, "We've got to maintain profitability, and you want to set up a whole second system that's just going to sit there and wait for something to go wrong?"

And the answer was, "Yes, that's right. Because when it goes wrong you'll be glad you have it. You don't fly over the Atlantic Ocean with one engine. If you want to run this as if the site going down is like a plane going down, you have to have it." When eBay lost \$10 billion off its market cap because of outages, it got the idea that a few million dollars for a redundant server was a good idea.

**Bachann:** How do you measure your success?



Your supply chain should be perfectly capable of ingenuity.

PeopleSoft, Inc. PeopleSoft & the PeopleSoft logo are registered trademarks of PeopleSoft, Inc.

A vertical collage of 14 photographs. The images are: 1. A person in a blue shirt sitting at a desk in a library. 2. A person in a blue shirt holding a book. 3. A person in a blue shirt holding a book. 4. A person in a blue shirt holding a book. 5. A person in a blue shirt holding a book. 6. A person in a blue shirt holding a book. 7. A person in a blue shirt holding a book. 8. A person in a blue shirt holding a book. 9. A person in a blue shirt holding a book. 10. A person in a blue shirt holding a book. 11. A person in a blue shirt holding a book. 12. A person in a blue shirt holding a book. 13. A person in a blue shirt holding a book. 14. A person in a blue shirt holding a book.

## SUPPLY CHAIN

People power the internet.™

# PEOPLE *Soft*



understanding of the architecture and environment here, so I'm somewhat dependent on them. But they tend to want the group to remain small so that they can hold on to their power. They really understand the systems and in some ways don't want to see them grow. I've tried to spend a lot of one-on-one time with them and tell them the fact that the group is growing will be a real opportunity for them. But it's hard because they're looking at the fun (without the pressure) that they had before I arrived.

Also, when I look to recruit from my outside contacts, they are people who've worked at big companies, and I worry about their ability to scale down into a startup environment. These kinds of managers tend to rely on a lot of process and structure and other people doing the actual work while they manage. They're not ready for a lot of hands-on work they'd be doing

with a startup.

Did you find that at all?

**Bachann:** Yes. When I came in there were some people who had been here from the start and knew how everything worked. In this new economy, the junior people are often extraordinarily talented. They may have technical knowledge, but you must make sure they have the necessary people, communication and managerial skills. Since you need all those qualities to be a successful manager and make things grow, I've tried to impress on those junior people what we're trying to do through coaching and teaching sessions.

If that doesn't work, you may have to streamline roles to keep everyone working on a manageable workload as the technology balloons. Sure, this can cause them some frustration, but from the company's perspective it's what's needed. They're look-

ing at the tree while you're looking at the forest.

On the senior manager side, yes, it was difficult to find some of these people with good hands-on experience. So I looked carefully and in some cases waited for them. I didn't just hire anybody; I even used consultants to get things done while I was looking.

We've recently hired a technical recruiter to help us in hiring. I've also recruited some developers and asked them who some of their best managers were and then went and recruited them. Still, it's a tough situation. **CIO**

Want to participate in a Virtual Mentor article? Drop a note to Senior Executive Editor Richard Pastore at [pastore@cio.com](mailto:pastore@cio.com). Also consider enrolling in CIO's Mentor-Matching Program at [www.cio.com/forums/executive/mentors](http://www.cio.com/forums/executive/mentors). Staff Writer Stewart Deck can be reached at [sdeck@cio.com](mailto:sdeck@cio.com).

## Introducing CIO's Online Mentor-Matching Service

# Meet Your Match

Let us help you find a mentor or someone to coach

**I**t's impossible to know all there is to know about being a successful IT executive. Neither a newcomer nor a 20-year veteran has all the answers to mastering one of the hardest jobs in today's organizations. That's why there's a critical need for IT leadership mentoring and executive coaching. That need is especially great with a new generation of IT managers taking the reins as CIO and CTO. Meanwhile, veteran leaders can offer a treasure trove of hard-earned insights such as how to play the political game successfully and provide smart project leadership and the keys to motivating IT staff and managing user expectations.

Unfortunately, it's hard to find someone to work with. Even starting

the search can be a challenge. We can help. CIO's free mentor-matching service will pair IT managers eager to learn from a veteran's war stories and wisdom with seasoned executives who want to share their ideas and advise earnest, bright professionals. We provide the ground rules; you provide the small time commitment of one phone call or in-person interaction per month for a three-month trial period. Visit [www.cio.com/forums/executive/mentors](http://www.cio.com/forums/executive/mentors) for more information and to enroll—because this job ain't getting any easier.





Recruiting doesn't stop when people get hired.



**PeopleSoft Human Resources Management** gives you the ability to assess each and every employee's job satisfaction in real time. Our new Workforce Analytics products help you gauge how satisfied an employee might be in terms of compensation, benefits and work environment. You can even add learning, professional growth, and industry benchmark data into the mix. And because our new generation of e-business applications is built to run purely on the internet, you can take action on the analysis on any web browser. So you'll always have what you need to keep recruiting your best people — which means you won't lose them to your competition.

CUSTOMERS • EMPLOYEES • SUPPLIERS

People power the internet.™

**PEOPLE**  
*Soft*



**With e-business systems,  
seamlessness is  
the whole point.**





# But until now, nobody could seamlessly manage the whole thing.

Let's face it. You have to be on the leading edge of what has become known as e-business. But you cannot afford to lose sales, customers and brand reputation because of failed transactions. So your systems must be more than excellent. They must be failsafe.

Relax. Tonic has arrived.



Now you can feel comfortable about your company's dependence on web applications. Because the Tonic enterprise solution heralds a new era of web applications management.

Load testing and integrity assessment before going live. And on-going monitoring of systems beyond anything previously offered by a single company. That's Tonic.

Active within hours, not days. Easy to use with no retrofitting of your systems required. But with the scalability to simulate millions, not just thousands, of simultaneous users. After all, you plan to be that successful, right?

Suddenly the leading edge is a much more comfortable place to be.  
[www.tonic.com](http://www.tonic.com)

**TONIC**<sup>TM</sup>

Guaranteeing Your Net Works.<sup>TM</sup>



Does Portera have a winning business plan? You tell us.

# RATE THE startup

BY EMELIE RUTHERFORD

**Startups come and go**—like mom-and-pop coffee shops on fading downtown streets or oriental-rug outlets in tacky strip malls. They open with big banners and high hopes. Most don't last. But still they keep coming, with earnest, optimistic proprietors trumpeting their business plans to bargain-hungry investors and speculators. The trick is to know which business models have a good chance at success and which are likely to lead to dead ends.

We're all backseat e-drivers these days; either we're potential investors or we're on the alert for the next new idea or angle that might work in our own companies. Take a gander at Portera, a dotcom that hopes to make money by hosting basic applications and by providing outsourcing services to consultancies and other big-spending professional services providers. Read on, see what a couple of experts think, and decide whether this company is bound for easy street or the back alley of broken dreams. When you're done, visit [webbusiness.cio.com/archive/052500\\_rate.html](http://webbusiness.cio.com/archive/052500_rate.html) and tell us what you think of Portera's chances for success.



# the portera details

## THE STARTUP

Campbell, Calif.-based Portera Systems ([www.portera.com](http://www.portera.com)) helps the professional services industry get wired. The 2-year-old company's product, ServicePort, combines Web-hosted applications with outsourcing services. ServicePort's hosted suite of applications automates business functions, ranging from project bids to

invoice delivery, and features industry-configured applications from the Oracle E-BusinessSuite. Its outsourcing services cover such back-office business processes as staffing, accounting and document-center services.

While Portera's focus has been predominantly on IT and management con-

sulting, it plans to move into other vertical functions, such as advertising and PR, and legal services. It also expects to reach the engineering and government services markets via the customer base of Invisic Software, a March 2000 acquisition that provides enterprise service administration and management services.

## HUMAN CAPITAL

### Gary L. Steele, CEO

#### *Previous experience:*

- VP and GM of Sybase's middleware and data warehousing product group
- Group manager of information management marketing at Sun Microsystems

### Kevin B. McDonald, VP of marketing

#### *Previous experience:*

- Senior VP of marketing and strategic

partnerships at FirstFloor Software, since acquired by CalicoCommerce

- VP of sales and marketing at Pinnacle Systems

### David Knight, VP and GM, consulting products

#### *Previous experience:*

- Director for Internet transaction products at Sybase

- Product manager at Oracle for Oracle7 DBMS

### Robert Quinn, CIO (for Quinn's perspective on dotcom leadership, see "Virtual Mentor," Page 90)

#### *Previous experience:*

- CIO at eBay
- Head of the computer systems and IT group at Sun Microsystems

## THE BUSINESS MODEL

### Venture capital

June 1999: \$13.8 million from Weiss, Peck & Greer Venture Partners; Oracle Venture Fund; Chase H&Q; Spring Creek Partners; Kleiner Perkins Caufield & Byers; Institutional Venture Partners

March 2000: \$33 million from Van Wagoner Capital Management; Integral Capital Partners; Weiss, Peck & Greer Venture Partners; Oracle Venture Fund; Spring Creek Partners; Institutional Venture Partners; Kleiner Perkins Caufield & Byers; Chase H&Q; RRE Ventures

**Market:** \$1.2 trillion professional services industry (consulting firms, media agencies, solutions integrators)

**Customers:** Portera has more than 140 customers, including HP, Network Associates, Vodafone AirTouch, Inventa Corp., Asera, Epiphany and Invensys.

**How Portera Makes Money:** Portera makes money through monthly subscription fees for ServicePort, through monthly fees and transaction-based fees for its back-office business services, and through commissions made on such marketplace purchases as corporate gifts.

**The Competition:** Portera faces competition from companies whose offerings compete with some aspect of Portera's overall offering. Such competitors include

- Enterprise software vendors—such as Niku Corp., Evolve Software and Change-point Corp.—that offer professional services automation
- Enterprise resource planning software companies—like Oracle Corp., SAP and PeopleSoft—that either currently offer or plan to offer software or applications for the professional services industry

- ASPs that partner with enterprise software vendors or ERP companies
- B2B procurement providers like Ariba and Commerce One that partner with enterprise software or ERP vendors
- Outsourcers—such as ReSource-Phoenix.com—that focus on business-process outsourcing

**The Road Show:** Recognizing that the market for its application and e-business services is competitive and subject to frequent change, Portera plans to stay ahead of the competition by remaining flexible, scalable and adaptable to changing market conditions. Portera claims that its core competencies are its understanding of the professional services industry, its ability to integrate Web-hosted applications and people-driven business services, and its power to deliver those services to end customers via the Internet.



# rating portera

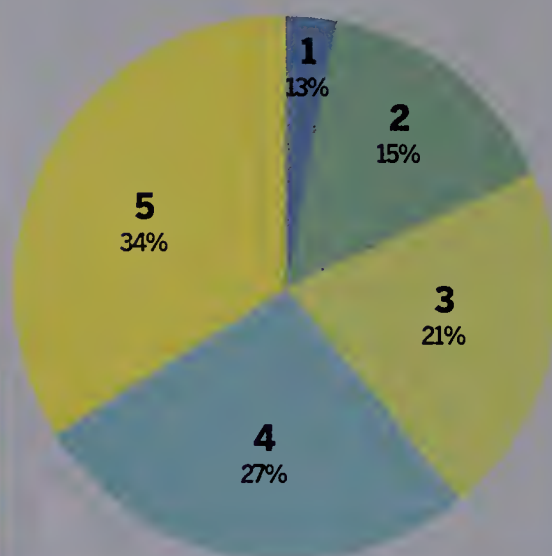
## WEBBUSINESS SITE VISITORS' RATING

Rate the Startup is a monthly interactive series of CIO's WebBusiness e-zine that examines promising (and less-than-promising) dotcom startups. After peeking behind the startup's walls, we ask site visitors and industry experts to rate the company's chances for success. For more on the series, visit [webbusiness.cio.com/startup](http://webbusiness.cio.com/startup).

### THE CONFIDENCE SCALE

- 1 IT WON'T GET OFF THE GROUND**
- 2 IT WILL LOSE IN THE LONG RUN**
- 3 IT WILL PAY ITS BILLS BUT WON'T SEE BIG PROFITS**
- 4 IT'S A CONTENDER; I'LL KEEP MY EYE ON IT**
- 5 IT'S A WINNER. WHERE CAN I BUY THIS STOCK?**

### How Portera Scored on Our Site As of June 27, 2000



## AN EXPERT'S RATING



### Jeffrey Shuman

Shuman is founder of The Rhythm of Business, a Newton, Mass.-based consultancy for early-stage Internet companies, and professor and director of entrepreneurial studies at Bentley College in Waltham, Mass. He has founded four previous businesses. He can be reached at [jeff@rhythmofbusiness.com](mailto:jeff@rhythmofbusiness.com).

### Shuman's rating

**4** It's a contender; I'll keep my eye on it.

### Strength

Portera is delivering to its customers a more scalable, timely, cost-effective and flexible suite of applications than they could otherwise achieve on their own. Its closed-loop solution works well because it provides both software tools and people resources in all areas beyond the professional company's core business.

### Weakness

Scalability of the people resources required could be its Achilles' heel, since delivering a satisfactory customer experience is key.

### Looking ahead

Portera has to ensure it can grow with its burgeoning customer base and increasingly upgraded technological advances. Also, integrating with wireless devices and allaying security concerns will be critical issues to resolve and thus important partnerships to achieve.

## AN EXPERT'S RATING



### Robert Glazer

As associate director of New Ventures at Cambridge, Mass.-based Cambridge Incubator, Glazer evaluates potential member companies. He also cofounded Brand-Stamp, an Internet-based company that provides warranty registrations for online purchases. He can be reached at [glazer@cambridgeincubator.com](mailto:glazer@cambridgeincubator.com).

### Glazer's rating

**4** It's a contender; I'll keep my eye on it.

### Strength

Portera provides a powerful set of tools to the professional services organization in a cost-effective manner. It also allows customers to scale functionality without the high costs of systems integration. The company has both a strong management team and strong financial backing.

### Weakness

Given its ASP operating model, Portera will be able to attract clients that are technologically sophisticated and that operate on high-bandwidth networks. The company will need to build an extensive sales force and customer support function to properly service customers.

### Looking ahead

Portera's customer acquisition costs are its greatest risk. Portera should develop strong partnerships with companies that have existing relationships with its target markets.



## Network Convergence: As Much Art as Science.

Don't let  
your voice,  
data, and  
storage  
networks  
get left out  
of the picture.

Tomorrow's intelligent enterprise network is a landscape of convergence—integrated voice, data, and storage network traffic. Common infrastructure, single point management, dynamic bandwidth. A real masterpiece.

But this portrait of the future takes planning. With people that know networks inside and out. Who offer technology built upon scalability, availability, and manageability. And deliver solutions designed with the future reality of convergence in mind. That's why INRANGE network solutions have been at the heart of data centers, communications rooms, and carrier facilities worldwide for over 30 years. Over 2,000 of them.

So to get the right mix, make the right call. Call INRANGE at 1-877-627-9855. Or visit [www.inrange.com](http://www.inrange.com) today.



**INRANGE**  
*Where Networks Converge*

Proud to be a member of the SPX family of High Value Companies



# *Fast, Cheap* *and* UNDER CONTROL

*Here's how one CIO and his team pulled off a massive  
global migration six months ahead of schedule*

BY DEREK SLATER

## MISSED ANY PROJECT DEADLINES LATELY?

Almost everybody has; after all, 28 percent of all IT projects get killed, and only 26 percent are completed on time and on budget, according to consultancy Standish Group in West Yarmouth, Mass.

Well, Gary Sutula is not one of the deadline busters. He's senior vice president and CIO of R.R. Donnelley & Sons Co. in Chicago. Sutula and his group just standardized the \$5.1 billion printing company onto a single electronic-mail system. That meant migrating 18,000 users worldwide from a dozen different packages to one, with new hardware, a new network

### Reader ROI

- ▶ Learn practical tips for e-mail conversion projects
- ▶ Discover why staffing is half the battle
- ▶ Pick up hints for prioritizing large-scale project management
- ▶ Successfully manage the inherent political issues

PHOTOS BY JEFF SCIORTINO





**Gary Sutula, senior vice president  
and CIO of R.R. Donnelley & Sons**



architecture and newly centralized e-mail management to boot. Just to keep things interesting, the migration effort happened concurrently with, and even depended on, Donnelley's Y2K remediation project—whew.

Sound like a familiar story, the one that always ends with an over-run? Actually, despite hitting the usual unforeseen obstacles and taking a few detours, the e-mail migration project was wrapped up six months early. Here, Sutula and company offer an inside look at the project and some fundamental tips for keeping IT projects on the right track: planning and execution, resource management and end user training.

### The Problem and the Plan

**E**-MAIL MIGRATION MAY SOUND SIMPLE IF YOU'VE NEVER done it. Take out the old system, toss in the new, activate the accounts—how hard can it be? Dig a little deeper, though, and you'll find e-mail system changeovers have their own set of technical and political challenges.

Migrating mailing lists and message archives to the new system is a priority. Changing workers' existing Internet e-mail addresses, which have already been printed on business cards and passed out to clients, is absolutely verboten. Training, as always, is a must—and nobody likes to take the time to do it.

R.R. Donnelley also faced additional complications. For starters, of Donnelley's roughly 34,000 employees, the 18,000 electronic-mail users are dispersed across 200 facilities throughout Asia, Europe, and North and South America. Many of these locations came into the Donnelley fold through corporate acquisitions, leading to the usual global mélange of information systems. "We had a museum here—you could see all the technologies we've ever used," Sutula says.

When Sutula joined Donnelley in mid-1997, he took inventory of the company's IT systems and found eight major e-mail systems, plus assorted pockets of slightly to heavily modified programs. Even those numbers mask further complexity. For example, the 1,600 users running VMS Mail were actually using 10 different versions of the program.

In many locations, employees who had long since departed the company still had active e-mail accounts. Almost all locations handled administration of those e-mail systems on their own—although in some places, nobody knew how to maintain or administer the current system, other than perhaps adding new employee accounts.

Much of the hardware serving the e-mail and other systems needed work to ensure Y2K-readiness. Rather than simply remediating, though, Sutula recognized the opportunity to rationalize and simplify the company's entire systems architecture. Sutula, who reports to William Davis, Donnelley's chairman and CEO, told the executive board, "For 20 percent more, I can put this back together in an attractive way." Their response was very enlightened," Sutula recalls. "It was literally a 10-minute conversation." No elaborate cost-justification spreadsheets were required, although the board members clearly mandated what they wanted for the money: better service and lower ongoing costs for e-mail systems.

### Plans and Personnel

**T**HE FIRST STEP IN ANY PROJECT IS FINDING the right people to lead the charge and make it happen. For Sutula, that meant finding personnel with e-mail expertise. He hired Al Petras as director of information technology to head up the effort. Petras is a bank industry IT veteran who had previously run similar migration projects. Three technical people worked on the project

**Migration project veteran Al Petras was on the front lines of the global consolidation.**







## IMAGINE WHAT YOU COULD DO!



Project planning, staffing, resource deployment, time tracking, accounting, reporting...does it take your team away from quality design and implementation? Imagine what you could do with a fully integrated solution that helped you manage project administration.



Our StaffXpert™ professional services automation solution gives you all the tools you need in one fully Internet-enabled solution. So managing IT projects becomes easier, less cumbersome and more effective.



StaffXpert is available as an Internet ASP solution or web-based enterprise application that can be deployed quickly. It features advanced, patent-pending linguistics technology that totally automates resume capture from email and provides intelligent drill-down search capabilities. It even supports intellectual property management.



- • • • •
- Staff projects with the best matched internal and external resources
- Efficiently manage a contract workforce — with fewer headaches
- Synchronize projects and allocate internal resources to minimize downtime
- Cut down on administrative activities such as time tracking and status reports.

Imagine...

# StaffXpert™ from InfoDream

Project Management • Resource Management • Sub-Contractor Management  
Deployment Tracking • Timesheet Processing • Reporting

phone: 408.987.0100 [www.infodream.com](http://www.infodream.com) [sales@infodream.com](mailto:sales@infodream.com)





**Lotus Notes hired guns (from left) Don Bush, Dave Dvorak and Dave Swanson.**

part-time—Notes architect Don Bush and specialists Dave Swanson and Dave Dvorak. Three full-time administrative workers coordinated the efforts of the central office with those of the teams handling the field work. This core team met every Wednesday—with ad hoc daily meetings at crucial points—to tweak plans and schedules.

Petras and his team designed a 50- to 60-page packet of instructions—including the project's local time line, a list of tasks and responsibilities, and frequently asked questions addressing user and administrator concerns alike—and distributed it to each site in advance of the actual changeover. Sutula says this script was absolutely essential to hitting the project deadlines. "We wanted a repeatable plan. You'd better pilot it and be open to modification, but you have to get it down," he says.

To perform the actual onsite conversion, Sutula's team hired experienced field coordinators through a technical temp agency. Each site had two dedicated coordinators during changeover week: one at Donnelley's central IT location in the Chicago suburb of Downers Grove and the field coordinator deployed at the local

site. Local IT employees worked under the direction of the field coordinator to do the hands-on tasks. In a mildly ironic twist, the project teams couldn't communicate reliably through e-mail to coordinate their efforts—the existing setup was too jumbled. To work around this obstacle, Donnelley brought in another Lotus package called Teamworks for real-time collaborative work. (Now that the e-mail system is up to speed, the company has pulled the plug on Teamworks.)

Within this technological and personnel framework, Petras' team was able to handle changeovers for as many as six sites per week, with 100 seats per site—considerably faster than the goals specified in the original plan.

### Speed Bumps and Solutions

**N**ATURALLY, DONNELLEY'S MIGRATION project hit its share of speed bumps. At one point, Sutula says, the IT staff engaged "in a pitched battle" internally over the choice of the central package:

Lotus Notes or Microsoft Exchange. "If it were just mail, we might have chosen differently," he says. Ultimately the company went with Notes because it anticipated using more of the software's collaboration and groupware features—a decision Sutula says has proven correct in hindsight.

Greater challenges arose over training issues. The biggest on-the-fly revamp to the plan involved the laptops used by the sales force. Since sales reps are paid on commission, time spent in the office for e-mail training or moving old files onto a new laptop is money out of their pockets. In light of this, Donnelley's migration team tried to expedite training by providing shorter training sessions for remote workers and letting sales personnel keep their current laptops as long as they were Y2K-compliant. This flexibility ultimately didn't work.

Donnelley eventually recalled all mobile computing devices and replaced them. The company adopted a hardball approach to training that was both effective and necessary. "The legacy mail was turned off and the accounts converted to Notes the night before scheduled training. Each person got activated for Notes in the training class. No show, no mail," Petras says with a grin.

Politics reared its head during the training process as well. Petras contracted with a single vendor, Raleigh, N.C.-based Productivity Point International (PPI), to provide training for all affected Donnelley employees. Donnelley Training Manager Alice Ann DeStefano supervised all the training efforts. However, some Donnelley locales already had technical training contracts they wanted to use in place of the centrally mandated training team. Again, Sutula and Petras tried



to be flexible. "We did two of those, but it was a complete disaster," he says. Part of Petras' plan was a simple five-question test employed at random to test trainees' knowledge of simple Notes procedures. Users trained through the central plan averaged better than 75 percent correct answers. Those who received nonstandard training were closer to 30 percent, so flexibility on that point went out the window. All locations were required to use the PPI training team. Strong support from Donnelley's executives helped cement cooperation when a few business units still resisted, Sutula notes.

Donnelley's new e-mail setup is centrally administered, with nine dedicated servers tended by Acxiom Corp. Sutula chose to outsource the servers because that option provided a more cost-effective way to ensure the reliability of the hardware. "We certainly didn't want to build a hardened site here" in the IT group's office-park headquarters, he says. The servers currently have enough capacity for 22,500 users, giving the company elbowroom to grow in the foreseeable future.

One aspect of the new system could stand improvement: uptime at international sites. For most sites, the system is up 90-plus percent, but that number occasionally dips into the 70s for some of the areas where the local Internet infrastructure is less robust. The bottom line, though, is time and money, and Sutula saved both. The project was originally slated for completion in June 2000. The final accounts were activated by Thanksgiving 1999. On the money front, the company declines to divulge specific dollar figures for expenditure or ROI, but Sutula says that Gartner Group figures indicate Donnelley's ongoing costs for e-mail service are less than half of the average corporate per-user expense.

## Lessons Learned

**W**HAT MADE DONNELLEY'S PROJECT WORK? IN ADDITION to careful staffing, Sutula draws three conclusions from his experience with this and other big IT projects.

According to Sutula, the first factor in Donnelley's success was prioritization and piloting. "You have to go slow to go fast," Sutula says. IT projects always have a sense of urgency attached, whether it's because of e-business pressures, Y2K or just plain old user expectations. However, IS has to enforce project man-

agement discipline by collecting system requirements, running pilots, and holding hard and fast to training demands. Cutting corners in an effort to speed up usually has the opposite effect in the long run.

The second factor was logistics, or resource management. Sutula sums up the project—and any major IT undertaking—in this way: "You're no longer in systems—you're in logistics. You have to manage the project based on data, based on resources." Basing timetables on 100 percent resource utilization—in other words, all the allotted staff working at 100 percent productivity all of the time—simply doesn't work. People get sick or take vacations, and plans need modification. "I've done huge rollouts for 15 years now. I always have a development manager and a rollout manager, and rollout

## R.R. Donnelley's E-Mail Migration Project

| BEFORE                                                                                                                                                                                      | AFTER                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eight major e-mail systems running at once, with the largest numbers of operators using OfficeVision (8,000 users), cc:Mail (3,500), VMS Mail (1,600), All-in-One (1,500) and Notes (1,200) | One e-mail system: Lotus Notes                                                                                                                                                                               |
| E-mail servers dispersed and controlled locally at business units                                                                                                                           | Nine servers with failover capability run by outsourcer Acxiom in Chicago                                                                                                                                    |
| Several different hardware platforms handling directory synchronization                                                                                                                     | All e-mail management is handled centrally                                                                                                                                                                   |
| Lotus Messaging Switch (formerly SoftSwitch) as a corporate messaging hub                                                                                                                   | Frame relay backbone network. Three major international hubs connected to Chicago via a wide area network, and five smaller international locations connected over the Internet using Notes' native security |

managers are selected based on their ability to handle logistics," Sutula says.

Third was amnesty. Finger-pointing might be the single greatest cause of sabotaged IT projects. Sutula says that despite due diligence and the most fastidious planning, something unexpected will happen to every major IT undertaking. "You can't let that destroy teamwork," Sutula says. "You have to create an atmosphere where people rapidly admit mistakes, take responsibility, and then you allocate the resources necessary to fix the problem."

It's hard to argue with a team that just wrapped up an 18,000-user project six months ahead of schedule. **CIO**

Executive Editor Derek Slater now uses Lotus Notes, since cc:Mail wasn't Y2K-compliant. Tell him your project management stories at [dslater@cio.com](mailto:dslater@cio.com).





# CIO

P E R S P E C T I V E S

Call 800 366-0246, or visit  
[www.cio.com/conferences](http://www.cio.com/conferences)

**October 15-18, 2000**

**Arizona Biltmore  
Resort & Spa**

**Phoenix, Arizona**

**Greater**

# EXPECTATIONS

**THE CIO AND CORPORATE STRATEGY**

- Develop Enterprise Leadership Knowledge
- Influence Corporate Direction
- Affect Real Change
- Anticipate Challenges



# Greater EXPECTATIONS

THE CIO AND CORPORATE STRATEGY

By straddling the role of IT and business visionary, in-house architect and corporate pioneer, the CIOs influence in an enterprise's success has never been more profound. To attain the deepest impact in shaping their organization's future, CIOs must be broad-based, multifarious enterprise leaders capable of envisioning, promoting, and driving IT and business strategy.

## CORPORATE HOSTS

AVAYA Communication  
Brio Technology, Inc.  
Cable & Wireless, Inc.  
Changepoint Corporation  
Chordiant Software, Inc.  
Citrix Systems, Inc.  
EDS  
Enterasys  
E.piphany, Inc.  
Genuity  
Hewlett-Packard Company  
IBM Corporation  
IDC  
Information Builders, Inc.  
Intel Corporation  
Intentia  
Intira Corporation  
Iomega Corporation  
Kyocera Mita America, Inc.  
Legato Systems, Inc.  
Lockheed Martin  
NetScout Systems, Inc.  
Powerware  
ProSight, Inc.  
Symantec Corporation  
Xerox Corporation

## TO ENROLL:

- Visit our Web site at [www.cio.com/conferences](http://www.cio.com/conferences)
- Call our conference hotline at 800 366-0246

October 15-18, 2000

Arizona Biltmore Resort & Spa ■ Phoenix, Arizona

## KEYNOTE PRESENTERS



**Jeffrey Garten**  
Dean and Professor  
International Trade and Finance  
Yale School of Management



**Michael Earl**  
Professor  
Information Management  
Director  
Center for Information Management  
London Business School



**Richard Barrett**  
Author  
*Liberating the Corporate Soul: Building a Visionary Organization*

## CONFERENCE MODERATOR



**Dr. Jim Wetherbe**  
Stevenson Professor of IT  
Texas Tech University  
Professor of MIS  
University of Minnesota

## FEATURED PRESENTERS



**Sandy Goldstein**  
Senior Vice President and CIO  
Airgas, Inc.



**David Aldridge**  
Executive Vice President and CIO  
The Home Shopping Network



# HER MAJESTY'S FLYING I.T. CIRCUS

The British are top-drawer when it comes to fumbling high-profile IT projects. We tour the rubble as the government preps its e-government push.

BY MALCOLM WHEATLEY

Even traditional British stoicism has a breaking point—and for more than half a million British citizens, that breaking point was sorely tested last summer by the introduction of a £120 million (\$180 million) computer system at the country's Passport Agency. Processing times for passport applications stretched to eight weeks instead of the normal 10 days. As telephone calls went unanswered—over a million in May 1999 alone—people began turning up outside the agency's six regional offices to request their passports in person.

#### Reader ROI

- ▶ Learn about a series of spectacular public-sector IT failures
- ▶ See how Prime Minister Tony Blair hopes to improve project management
- ▶ Explore the British plan to use e-government to improve services







In Liverpool, the queues stretched for more than 100 yards. In Glasgow, over 500 people queued for 150 yards. In London, thousands queued up in the rain, forcing the agency to purchase hundreds of umbrellas to loan to angry would-be travelers. Television crews descended in droves.

In contrast to the United States, where many people don't have passports, Britons' annual hot-spot vacations in France, Greece, Spain and Portugal are an institution. Passport renewals are a must. Adding to last summer's urgency, as it unveiled the new passport computer system, the United Kingdom also began requiring that children travel on their own passports, rather than as add-ons to their parents' papers. Consequently, the problem for many citizens was that their vacations appeared to be more imminent than the arrival of their passports: At its height, the backlog of applications reached 538,000.

For the long-suffering British public, the debacle was yet another in a long string of IT failures. Undaunted, the Blair government has embarked on the United Kingdom's highest-profile public sector IT project to date—e-government, where citizens and companies transact most of their business with central government through the Internet. The problem? IT's a huge hostage

to fortune. Past government IT failures have rarely touched individuals' lives: E-government will. And, as the passport fiasco showed, if it goes wrong, then the British bulldog possesses a formidable bite.

And in the passport case, that bite reached the Parliament. Senior government ministers were forced to make lengthy explanations in the House of Commons. A change in the law was rushed through, giving two-year, free of charge passport extensions at any post office. As hapless ministers bungled explanatory media appearances, mass-market newspapers like *The Daily Express* called for Cabinet sackings—an unusually forceful terminology to use in a country where the correct protocol requires unfortunates to be called on to “consider their position.” Compensation was announced for those whose travel plans were thwarted by the nonarrival of their passports.

And outside passport offices, a triage system was put in place, with agency officials scurrying along the lines dispensing advice and prioritizing people into “urgent,” “nonurgent” and “awfully urgent indeed, old chap” categories.

Home Secretary Jack Straw announced the recruitment of additional staff—this for a system that was supposed to reduce administrative headcount, not increase it—and promised that the situation would return to normal by September, an assurance that came as little comfort to those who had July or August vacation plans. At its nadir,

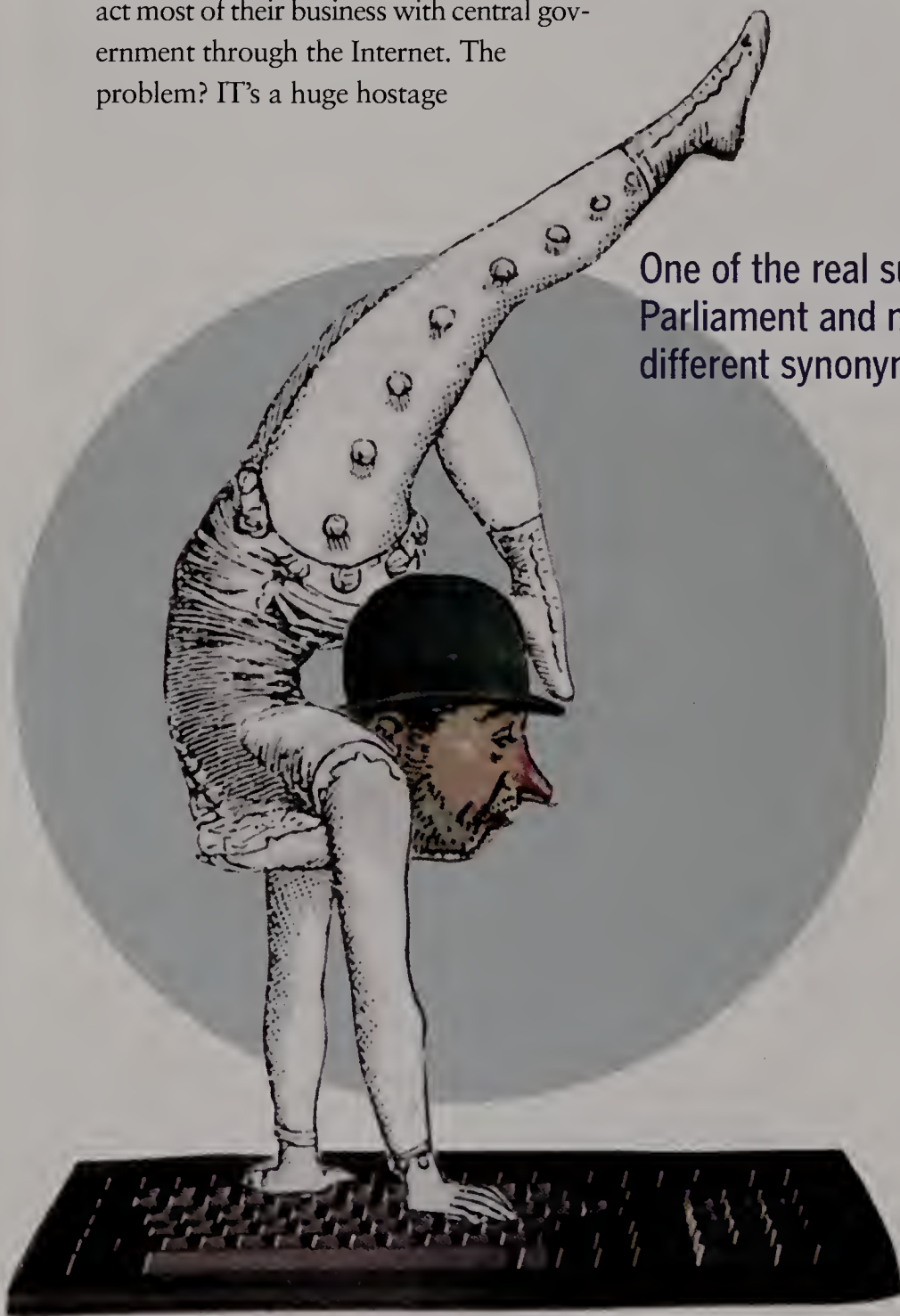
One of the real surprises was that opposition members of Parliament and media commentators could come up with new and different synonyms for *shambles*, *disaster*, *fiasco* and *bungle*.

Straw personally promised to move “heaven and earth” to get a passport to a woman going abroad for her honeymoon after her angry member of Parliament raised her case in the House of Commons.

## THE MINISTRY OF SILLY LINES

For both Siemens Business Services—the computer contractor that had developed the system—and the U.K. government's Home Office, the passport debacle bore an awful similarity to the shambles that had occurred a few months before. That was when Siemens' £77 million (\$115 million) computerization of the Home Office's Immigration and Nationality Directorate (IND) ran into the buffers. This system was designed to handle applications for asylum, extended stays and citizenship. Instead of processing 3,000 applications a month in fall 1998, the period prior to implementation, the number of applications processed had dropped to 995 by January 1999. The legal status of thousands was unclear. Again, queues of applicants formed—stretching for hundreds of yards on some mornings—while telephone calls went unanswered and newspaper reports spoke of sacks of unopened mail piling up in the IND's corridors in the south London suburb of Croydon.

And while the problem's initial public perception revolved around







Is this the best you can do?

Without Ajilon it might be. If you've been trying to secure your network alone, there's a chance you've been pretty wound up. But with Ajilon, you can relax. Our Information and System Security (ISS) Practice bundles services to preserve the availability, confidentiality and integrity of your information. As recognized leaders in their fields, our ISS professionals can assess your company's level of risk and implement solutions to wrap up your security issues. Call an Ajilon professional at 800-995-6277. We'll untangle your options and help you unwind.

  
**AJILON**  
INFORMATION TECHNOLOGY SERVICES  
[www.ajilon.com/security](http://www.ajilon.com/security)

risk management

vulnerability assessments

e-commerce

health systems security

regulatory compliance support

disaster recovery



hapless refugees from conflicts overseas, the economic reality was far worse. Foreign nationals working in key jobs all over the United Kingdom were affected—the country employs a lot of software engineers from the Indian subcontinent, for example—as were the top executives of incoming foreign companies intent on establishing a British subsidiary. Media coverage quickly refocused on lost jobs and lost opportunities for investment, forcing Home Secretary Straw to add several hundred employees to the IND's staff.

For a system that was supposed to process more applications, faster and with fewer people, the awful reality was that the new system was taking longer, requiring more people to administer and processing fewer applications. Not surprisingly, the government's National Audit Office and Public Accounts Committees, the two watchdogs that monitor government spending, duly lambasted both Siemens and the civil servants in charge of the project, with Siemens being fined £4.5 million (\$6.8 million) for its role in the disaster. (In fairness to Siemens, the penalty levied on it in the aftermath of the Passport Agency implementation was much smaller and reflected the role of the government's own rule-changing in exacerbating the shambles—a fine of a mere £66,000 (\$99,000), despite the fact that the new system resulted in the rising cost of processing passports from £12 to £15.50 [\$18 to \$23.25].)

Yet spectacular though the Passport Agency and IND failures were in terms of their public profile—there's nothing like queues of people on the television news to alert media and opposition members of Parliament (MPs) to savage the government—the systems' dif-

ficulties were relatively small fry in the fast-growing pantheon of British government computer fiascos. In fact, one of the real surprises in both imbroglios was that opposition MPs and media commentators still had the energy to lambaste the government for its information technology record—or, indeed, that they could come up with new and different synonyms for *shambles*, *disaster*, *fiasco* and *bungle*.

## CURIOUSER AND CURIOUSER

Take a look at some other recent British government computer fumbles. After massive computer failures in a new Social Security system installed by Andersen Consulting, for example, some 400,000 people received compensation payments of £10 (\$15) each—a National Audit Office investigation had reportedly found no fewer than 1,900 separate failures. The system, which was supposed to track Social Security contributions and calculate benefits owed to widows, pensioners and the unemployed, crashed within days of its debut in January 1999, resulting in 17 million contributions being unprocessed and forcing civil servants to guess at the benefits payments due to people. Even so, 160,000 pensioners were out of pocket by up to £100 (\$150) per week, newspaper reports claimed.

Or consider the continuing saga of the new national air traffic control computer system being implemented by Lockheed Martin, the cost of which will have tripled in the seven years it has been in gestation, and which was deferred yet again in 1999, with the result that it may not come online until winter 2002-03—or even later. Or the high-tech system that bar-coded patients' clinical notes in Britain's National Health Service. Implemented only in 12 hospitals (after eight years of work), the costs of the project spiraled over £32 million (\$48 million) by 1998, attracting criticism from the Public Accounts Committee in a report published in January for “almost unbelievably weak management.”

Or the even more expensive cancellation of a system that was to have automated benefit payments by issuing claimants magnetic swipe cards, usable in the U.K.'s 19,000 post offices. The project, which started in 1996, was finally canceled in late 1999 with just 205 post offices converted to the new system after an estimated expenditure of £1 billion (\$1.5 billion). Far from fining the outsourcing contractor in question—ICL, a subsidiary of Fujitsu—the government promptly awarded the company a contract to automate the operations of the post offices themselves, figuring that the company must have learned something about them in the three years it spent working on the project.

But best of all, according to aficionados of the British government's forays into computing (of whom there are many: One of the country's IT magazines, *Computer Weekly*, even has an annual award for the

## LESSONS LEARNED?

In a report released in January, the House of Commons' Select Committee on Public Accounts examined 25 government IT projects that did not work and came up with project management lessons from each, including

- Planners need to have clear project objectives and milestones.
- Projects that are part of an overall strategy must clearly fit together, and those implementing the separate projects must understand this clearly.
- Carefully examine the full implications of introducing changes to IT systems, including the impact of any policy changes (like passport laws) that may affect demand for services.
- Contingency plans are essential to cover the risk that the system won't be delivered on time.
- Planners should consider whether programs with sweeping goals might be too ambitious to attempt in one project.
- Arrangements with subcontractors should include terms with both incentives to reach project goals and penalties if they don't.
- Delays in implementing projects place them at risk of being overtaken by technological developments.



# OUR APPROACH TO B2B E-SECURITY HAS MASS APPEAL.



A secure extranet that's always open for e-business gives you clear advantages. But what about when you need a solution that scales to thousands or even millions of users every day? One thing's for sure: traditional security technology won't come through for you. Your gateway will turn into a chokepoint, slowing your Web site and discouraging your customers. If that happens, you're toast.

Fortunately, Secure Computing takes an entirely different approach. Our security products provide the most flexible solutions for authenticating and authorizing users at the first moment of contact – no matter how big

your network gets or how many people are using it. This scalable approach represents a breakthrough in e-security – one where the ideal solution is no longer measured by how many people you keep out, but by how many you escort in. For more information, visit our Web site today. **[www.securecomputing.com](http://www.securecomputing.com)**

© 2000 Secure Computing Corporation. All Rights Reserved

**SECURE  
COMPUTING**

Safe, secure extranets for e-business.™



## COULD IT HAPPEN HERE?

As every U.S. citizen knows, the United Kingdom doesn't have a monopoly on government IT fiascoes—decade-long modernization projects at the Federal Aviation Administration and the Internal Revenue Service were abandoned after billions of dollars had been spent. But in theory, at least, the Clinger-Cohen Act of 1996 now helps U.S. federal government agencies avoid future disasters by mandating simple guidelines to address the most common problems.

For a start, the Act establishes the position of CIO as an official position in every federal agency and makes the CIO responsible for calling the shots on which technologies should be used—and how. It also prohibits grand schemes: IT projects should progress incrementally, with regular reviews, using tried and tested technologies.

But—and here's the catch—the Act laid down no penalties for noncompliance by agencies, nor did it specify a timetable for compliance. The result? Good intentions—but deeds have yet to match the words.

—M. Wheatley

biggest government computer foul-up—competition is reportedly fierce), was the 1999 House of Commons report that acted as the obituary on a top-secret defense system buried deep in a war bunker beneath London's Whitehall.

Apparently code-named Trawlerman (government officials aren't exactly forthcoming with details), the system first began to run into difficulties when officials realized that the only access to the underground bunker was through a small hatch. Everything—even mainframes—had to be built, tested, dismantled, taken through the hatch, rebuilt and tested again. And the problems didn't end there. A combination of security and compatibility problems meant that by the time the plug was pulled, says one long-standing critic of the British government's approach to IT, the computers were operating to a specification so loose that it did not include a requirement that they do the job for which they were installed.

Nor were recent breakdowns isolated incidents. “[Although] 1999 was a bumper crop of IT failures in the U.K. government,” says the University of Manchester's Richard Heeks, author of *Reinventing Government in the Information Age*, “a number of those turkeys were eggs laid by the previous Conservative administration and which merely happened to hatch under the [present] Labor government.”

Indeed, consider the following damning indictment from *The Independent* newspaper: “Problems with the Department of Social Security's multimillion-pound computer project is the latest in a string of similar disasters. Hundreds of millions of pounds have been wasted on computers in the public sector, and the mismanagement appears to continue. Two months ago, it was revealed that the department had wasted about £35 million (\$52.5 million) on rework—dealing with mistakes. Sources within the department put the latest losses as high as £125 million (\$187.5 million). The National Audit Office and the House of Commons' Public Accounts Committee have been frequent critics of computer management by civil servants.”

The problem is those words were written in 1994, and the Department of Social Security's computer system referred to was the system that the current bug-ridden one replaced. In other words, these problems with government IT in the United Kingdom are not new, and they aren't getting any less frequent. As *The Independent* article went on to observe, the fact is that the U.K. public sector's history of flawed IT implementations stretches back many, many years.

## THE INQUISITION

But the problems that bog the systems down don't appear to be radically unusual or different. As Heeks says, the National Audit Office and Public Accounts Committee have for years been looking at the failures as they have occurred, and have generally come up with similar reasons for them.

Heading the list: a failure to set clear objectives, a lack of senior management support and taking on projects that were technically over-ambitious (see “Lessons Learned?” Page 118). Coupled to this list, Heeks points out, the challenges facing public sector projects are usually larger than those facing typical private sector projects; staffing and skill levels are lower because of the private sector/public sector remuneration imbalance; and government organization structures are more conservative and less flexible than in the private sector.

Apart from better public relations management of the fiascoes as they happen, there are few if any signs that the British government is learning from its experiences, Heeks adds. (Coincidentally, the interview with Heeks took place May 5, the day that the British media was reveling in still another high-profile problem: the delays in the ballot count for London's first-ever elected mayor, as hundreds of electronic vote-counting machines, being used for the first time, broke down from ingesting dust coming from the green baize tables on which the ballot papers were stacked.)

But for many weary British taxpayers, the best government IT-related news in 1999 was that the civil service Central Information Technology Unit was launching a no-stone-unturned review of government IT practice, headed by an IT expert seconded from the Australian civil service, Anne Steward. In contrast to previous blame-pinning exercises, ran the hype, this analysis would actually try to formulate some best practices.

Well good news for everyone except the hapless outsourcing and contracting community, perhaps, whose trade organization, the London-based Computing Services and Software Association, promptly announced in December 1999 the launch of its own review of what went wrong—fearing, possibly, that its members would find themselves smeared with others' failures. “We're certainly concerned about the number of projects that don't go as well as they should,” concedes the association's director in charge of the review, Charles



# WINDOWS 2000 MAGIC.

The IBM logo, consisting of eight horizontal stripes of varying lengths, is positioned on the right side of the advertisement. The background of the entire advertisement is a dark, grainy photograph of a server room with rows of server racks and people working at desks.

COMBO: Microsoft® Windows® 2000 Server and IBM Netfinity® servers  
EVALUATION: Phenomenal scalability and superior reliability  
ADVANTAGE: Advanced technologies — Chipkill® Memory, Active™ PCI,  
Light Path Diagnostics™\*  
EXTRAS: Netfinity Director,™ Web Server Accelerator (optional)  
WHY IBM: Enterprise-class performance with industry standard technology  
BUY IT: [ibm.com/netfinity/win2000](http://ibm.com/netfinity/win2000)

IBM Netfinity® business servers. Technology. Innovation. Magic.

\*Available on select models. See [www.pc.ibm.com/us/netfinity](http://www.pc.ibm.com/us/netfinity) for details. IBM, Active PCI, Chipkill, the e-business logo, Light Path Diagnostics, Netfinity and Netfinity Director are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States, other countries, or both. Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation in the United States, other countries, or both. © 2000 IBM Corporation. All rights reserved.





Hughes. "When things go wrong, it causes problems for the client, the general public and of course the suppliers." In particular, he notes, problems absorb association members' management time as they try to correct them, add to costs and create bad publicity.

According to Hughes, the high-powered team that the association has gathered to investigate the causes of failure includes a general who headed up the Ministry of Defense's information systems (and who now works for defense contractor British Aerospace); a former computer expert from GCHQ, the government electronic spying bureau (who now heads the IT function at Clifford Chance, one of the world's largest law firms) and a professor who has worked within the Cabinet Office. Together, they are taking testimony submissions from contractors as diverse as Andersen Consulting, EDS, IBM and Sun Microsystems.

Although its findings have yet to be released, says Hughes, the finger from his group's preliminary inquiries firmly points to basic project management principles as the main shortcoming—especially within the civil service. (Now there's a surprise.) "There's oodles of

good practice about, but all too often it isn't followed—many of the problems would be avoided if the government merely followed recognized good practice," he says. What's more, he adds, there's often a focus on the computer aspect of the project to the detriment of the change management aspect of the project. "There's no such thing as an IT project in isolation," says Hughes. "It's the business activity that needs to be understood and specified—the IT project is just a part of this. And it's essential to focus on the business objectives and outcomes, not just the IT outputs."

## SOMETHING COMPLETELY DIFFERENT

Reassuringly, this turned out to be one of the principal conclusions of the government's own findings, contained in a report published May 22. "A change of approach is needed," recommended the authors. "Rather than think of IT projects, the public sector needs to think in terms of projects to change the way government works, of which new IT is an important part." Officials declined to comment

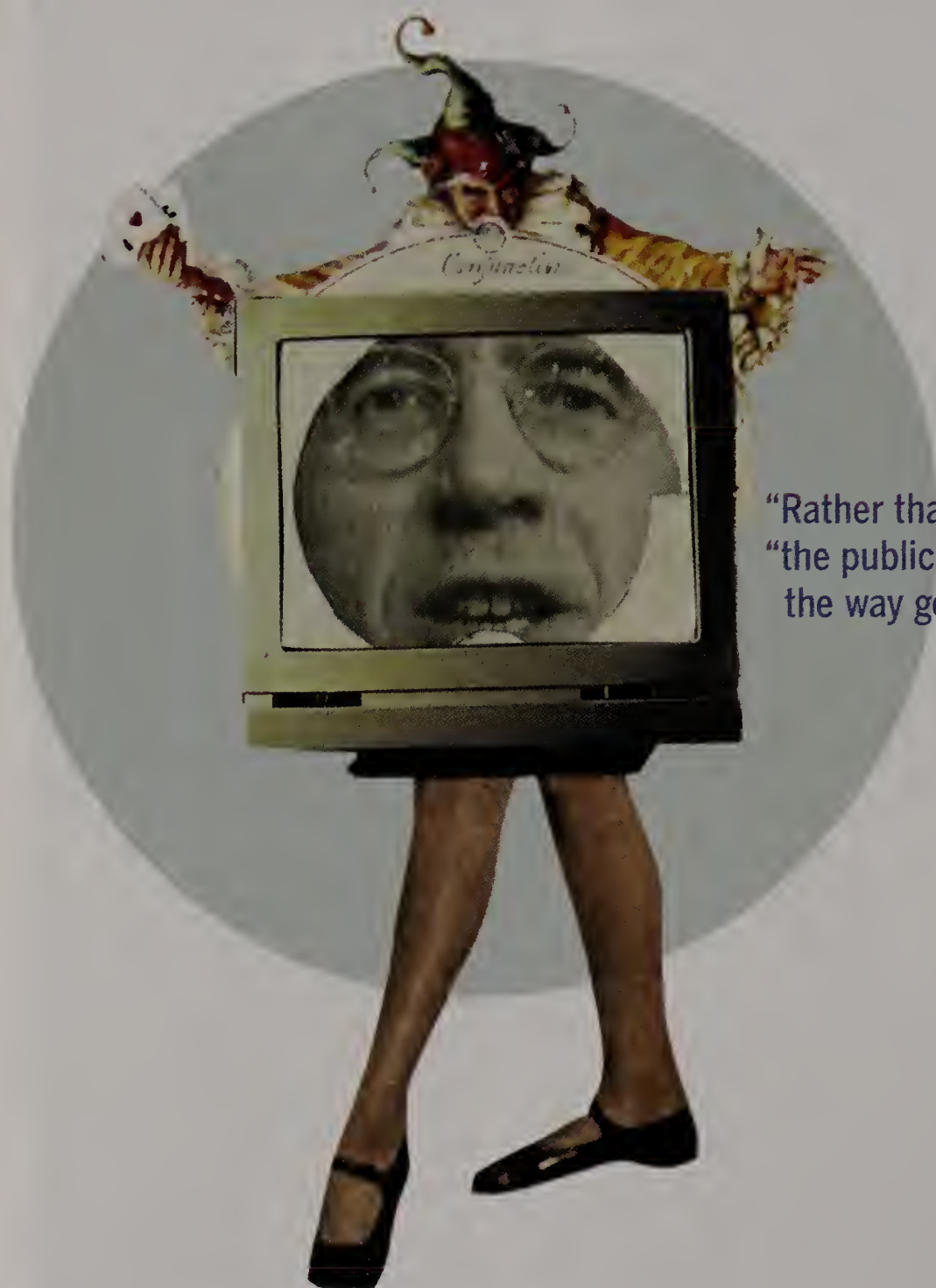
further, pointing merely to the views expressed in linked pronouncements by MP Minister of State, Cabinet Office Ian McCartney, in which he acknowledged that harnessing the power of IT is not always easy. "The tasks involved are very complex and fraught with risk," said McCartney. "The government has already successfully implemented a range of complex projects. However, we still need to improve performance and avoid the mistakes of the past."

Apart from the "think of the project, not the IT" recommendation, the report also suggests an organization change: the creation of a single responsible person to oversee each pro-

**"Rather than thinking of IT projects," urged a federal report, "the public sector needs to think in terms of projects to change the way government works, of which IT is an important part."**

ject rather than the management-by-committee approach that had preceded it. Changes in the procurement process were also suggested. Startlingly, these included the importance of suppliers understanding the requirements for a new system—and only promising what they could deliver—and a firm vow by the government to manage suppliers better. "This government will not tolerate failure and repeat the mistakes of the past," said McCartney. (For its part, Hughes' industry group, the Computing Service and Software Association, says it agrees with the government's findings.)

Not tolerating failure is a laudable goal but one that could prove tricky to achieve. Experts such as Marcus Pollett see the review as a welcome step in the right direction—providing that deeds follow words. And that could be difficult to determine. Pollett, a London-based writer and commentator





***What B2B is Meant To Be.***

O B J E C T S P A C E

***Introducing OpenBusiness™ from ObjectSpace: It's B2B Integration, Only Deeper.***

What if businesses could get closer on a more fundamental level? What if you didn't have to focus on your existing enterprise applications and, instead, could focus on new enterprise implications?

Welcome to OpenBusiness™ from ObjectSpace. OpenBusiness shortens the distance between your business and trading partners, customers, suppliers, service providers and new sources of revenue. It's trade at a more fundamental level, enabling true business process integration and new kinds of transactions based on the offer and transfer of digital assets.

Learn how XML and e-services are radically changing the way businesses use the Internet. To download your copy of the whitepaper, "Business to Business Integration (B2Bi): The Internet's Next Big Step" visit our Website at [www.objectspace.com/openbusiness/wc](http://www.objectspace.com/openbusiness/wc) or call **1-800 OBJECT1** for more information.

This is a new space. You haven't been here before.  
It's trade that transforms. It's the power between.

O B J E C T S P A C E

***The Power Between.***



who has followed the U.K. government's IT projects for some years, is scathing about both the review itself and the culture of secrecy that shrouds it and much else in the British civil service. "It's tremendously difficult to get any useful information at all from these people," he complains, referring to the Central Information Technology Unit and the Cabinet Office that oversees it. "There's a real control-freak mentality: Things do leak, but it's a tremendously secretive culture."

All of which bodes ill for e-government, a bold bid to deliver all services online by 2005. "One of the key ways in which businesses have applied e-commerce techniques is in managing their relationships with customers and suppliers," says an official in the Cabinet Office. "Public sector bodies must do the same if they are to derive the same benefits in terms of reduced costs and better procurement. The effect of the public sector doing this as a whole will itself be a significant contribution to advancing e-commerce."

Not to mention cutting the cost of government. Neil Mellor, program director of the e-government division at British Telecom—

## BIG E-GOVERNMENT PLANS START SMALL

In a small way, e-government is already happening. Companies can get export sales leads from embassies abroad e-mailed to their desktops, matched to their requirements. They can register new business vehicles with the U.K.'s Driver and Vehicle Licensing Agency, and file tax returns. Various forms of advice are also available.

In the next year, government plans call for companies to be able to register for value added tax (Europe's version of a national sales tax) and get truck permits issued online. After that, the pace quickens. By 2002, businesses will be able to submit their annual returns to the business registry, file for landfill tax, air passenger duty and insurance premium tax, and conduct land ownership surveys.

—M. Wheatley

to which the government is outsourcing some of the work—points to the significant savings. The savings could be as high as £13.5 billion (\$20.3 billion), he estimates—equivalent to a cut in income tax of between three and four pence in the pound. E-procurement and electronic service delivery alone could save £6 billion (\$9 billion).

And already, points out a government official, work has begun on building the Internet portal through which citizens and businesses will communicate with government. Intended to be up and running this summer, it will provide relatively static information at first, but from a single source rather than multiple websites. Work on the second stage of the project—building links between the portal and government IT systems, so that, say, a change of address has to be communicated only once—will begin later this year.

But, ever accident-prone, the U.K. government soon slipped on yet another banana skin. Announced with a huge fanfare in April, officials forgot to check the name for the portal—U.K. Online. It's a great name for a portal, but it also happened to be the name of a middle-ranking Internet service provider, which was less than amused to find its name hijacked. Once again, awkward questions were asked in the House—this time from the member of Parliament in whose constituency the business is based.

An accommodation was apparently reached, and U.K. Online continues to be the name of the e-government portal. How? On what basis? Officials remain tight-lipped. Good lord, no, they say. We can't release information like that... **CIO**

What project blowups have you witnessed? Write us at [letters@cio.com](mailto:letters@cio.com). Malcolm Wheatley can be reached at [malcolm\\_wheatley@compuserve.com](mailto:malcolm_wheatley@compuserve.com).





# SUCCESSFUL IT PROJECTS. REPEATABLE PROJECT SUCCESS. HAPPY PROJECT TEAMS. MUST BE PRIMAVERA TEAMPLAY.™

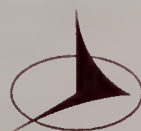
Introducing Primavera TeamPlay™ — the only IT project management solution that successfully unites best-practice methodologies and effective project management. Now you can evaluate the impact of all the projects you take on and make certain they reinforce corporate business goals. Complete projects as promised using established methodologies and draw upon lessons learned to improve performance on future commitments.

With TeamPlay, project teams can collaborate like never before. Developers know what to do and how to do it. Project managers proactively handle project issues and risks. Sponsors see measurable progress on their projects. Team members can connect directly to project details over the Web and post feedback on their assignments. Making project success more repeatable and enjoyable for everyone involved. Which is exactly what everyone wants. And it's available right now. Find out today what new Primavera TeamPlay can do for your projects, and your people. Call 1-800-423-0245 or visit [teamplay.primavera.com](http://teamplay.primavera.com)

PRIMAVERA  
**TEAMPLAY**™  
IT PROJECT MANAGEMENT



P O W E R T O T H E P E O P L E



**PRIMAVERA**  
*How the world manages projects*



At the CIA, the secret  
to knowledge management  
was hiding in plain sight

BY ELANA VARON

# The Langley Files

## The Organization: Central Intelligence Agency

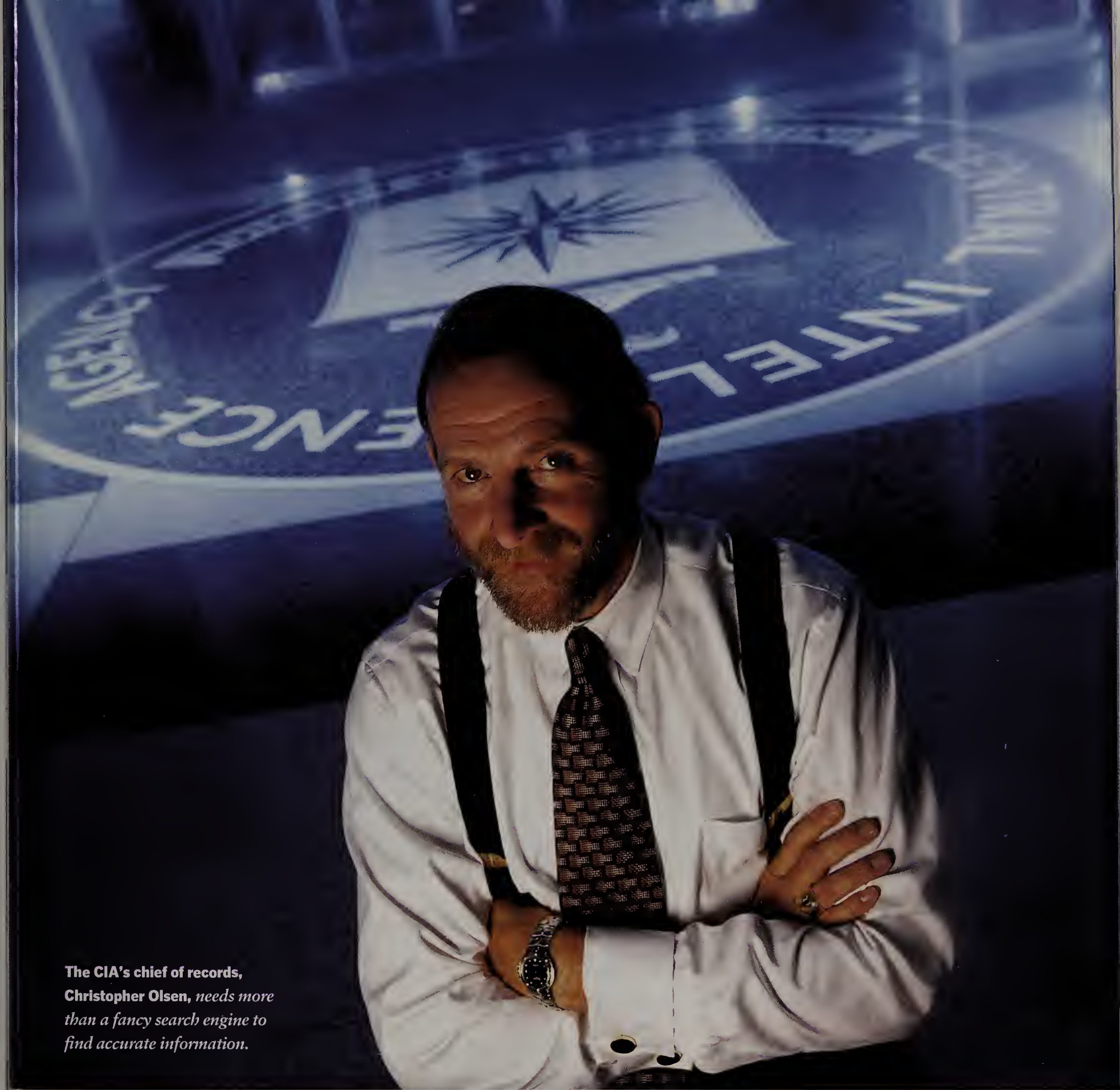
**Founded** 1947 **Budget** \$3.1 billion (estimate) **Employees** 16,000 (estimate) **KM Problem** How to organize many types of electronic information used to produce daily intelligence briefings for government leaders **URL** [www.cia.gov](http://www.cia.gov)

**THE CENTRAL INTELLIGENCE AGENCY** doesn't like to talk about its mistakes. It's not just embarrassing, but officials believe exposing details about how an operation went wrong reveals too much about how it captures enemy secrets. But published statements and news reports suggest one recent error—the U.S. bombing of the Chinese embassy in Belgrade during the Kosovo war last year, which killed three and injured 20—happened in part because CIA officers targeted what they thought was a Yugoslav Army warehouse based on outdated maps, and others failed to catch the mistake before the proposal was passed to the military.

No knowledge management system can replace human judgment, but CIA officials are convinced that if employees can find the information they need more easily, they'll produce better analysis and make fewer errors like this one. CIA analysts draw from tens of thousands of satellite feeds, news reports and tips from counterparts in other government agencies to produce daily intelligence reports for the president and military leaders. But if someone who isn't part of an analyst's network of colleagues has some critical data or a new insight, it's hard for him to learn about it. To protect classified information from falling into the wrong hands, the CIA discourages employees from sharing information with anyone who can't prove they need to know it. As a result, groups of analysts have erected thick firewalls around themselves, built their own systems and organized information in ways that make sense only to them.

It's this lack of uniformity that bedevils most knowledge-sharing efforts, says Christopher Olsen, chief of records and classification management with the agency. It's hard to find anything—even green beans in a grocery store—if you don't know how what you're





**The CIA's chief of records, Christopher Olsen,** *needs more than a fancy search engine to find accurate information.*

looking for is arranged. Knowledge management experts call such organization schemes taxonomies.

"If information isn't captured [in a filing system], it goes into the corporate mass in a disorganized way," Olsen says. "Even if you put some fancy search engine over it, the likelihood of being able to get to the information you want quickly is not high." So

when the CIA launched a new knowledge management project two years ago, Olsen and his boss, Deputy Director of Information Management Lanie D'Alessandro, argued for a solution based on a tried-and-true taxonomy—the system that its in-house librarians and records managers had been using for more than half a century for cataloging official agency records.

It's these records, not surprisingly, that are most valuable to analysts. As a government agency, the CIA is required by law to save documents that explain its operations, from national security assessments to covert actions. These records are organized by subject matter and timeliness under numerous categories and subcategories. Anything important enough for others to see is, by def-



inition, important enough to store in this official record-keeping system, which also includes procedures for getting rid of outdated material.

The CIA needs knowledge management for the same reason large companies do. No longer focused on one well-known enemy, as it was on the Soviet Union during the Cold War, and under pressure to deliver better products at lightning speed, it's much harder for CIA analysts to rely on their own collections of data and personal contacts and keep up with the workload.

"We looked at what we actually kept as business records," notes Olsen, and analysts agreed that this was the information they wanted to be able to share. From there, the CIA set out to design a knowledge management system that mirrored how files were traditionally organized. The solution: something they call a "metadata repository," which is essentially a Web-enabled "card catalog" that lets end users search for information using standard fields, such as author, subject, date, secrecy level and each file's original recipients. Most of this data is already supposed to be collected for record-keeping purposes, although a recently released audit of CIA record-keeping practices by the National Archives concluded that not every office in the agency has done this consistently in the past.

The agency intends to solve this problem by automatically capturing most of the metadata. New information systems or upgrades to legacy systems will include this capability, although to date only four systems do.

Having the metadata repository will let the CIA balance analysts' need for informa-



**"If information isn't captured, it goes into the corporate mass in a disorganized way."**

**-CHRISTOPHER OLSEN**

tion with traditional security concerns. "Before, we could never be sure how to let someone know we had something that would be of use to them without divulging too much," says Olsen. Using the metadata repository, an analyst can get a list of

resources. But because the search engine screens the database according to each user's security clearance or similar restrictions, the analyst would learn only about resources he is allowed to know about.

Because users get pointers to information from the repository but not necessarily access to the actual files, the people who own the information can still control whether they share it. There's no guarantee that they will, acknowledges agency CIO John Young. "It would be fatuous if I said we had solved the problem and that every officer in the agency was inspired to put the interests of the agency above the interests of his or her office," he says. But the demands of the job are opening minds and databases. "Intelligence problems require more cooperative



# How do you choose a UPS

when you can't even guess how many critical systems you'll have to support next year?

By picking a UPS scalable to your network requirements, space, and budgetary needs.



For over 30 years, Liebert has provided power protection for the world's most critical systems. We designed the new *Nfinity*™ UPS to carry on the tradition of Liebert reliability in today's critical network applications.

The modular design allows you to configure *Nfinity* to match your changing power needs, and all modules are hot-swappable, allowing for uninterrupted performance when you service or expand the system. You'll find redundancy and patent pending intelligence features in the power and battery modules, power bypass systems, communication paths and system controls. No other UPS achieves that tremendous breadth of reliability.

*Nfinity* offers superior value. It's extremely cost-efficient to operate and ships preassembled and pretested, eliminating costly user assembly time. You're also backed by Liebert's service organization – trained and staffed to support you 24x7x365. For complete product information, visit our website at [www.nf3.liebert.com](http://www.nf3.liebert.com).

***Nfinity*** – the easily scalable, incredibly intelligent, remarkably redundant UPS that takes systems availability to the next level.

To find your local Liebert Representative or for information on becoming a VAR:

800-877-9222 dept. NF3

[www.nf3.liebert.com](http://www.nf3.liebert.com)

[info@liebert.com](mailto:info@liebert.com)

 **Liebert**®

KEEPING BUSINESS IN BUSINESS.®



work than before," he adds.

D'Alessandro says analysts "have been yearning for some standards to allow them to accept and pass along" files because they don't have the budgets to build interfaces system by system as they did in earlier, better funded times. The CIA doesn't disclose its budget, but according to one recent estimate, the total money the United States spends on intelligence has just kept pace with inflation.

Many companies also catalog important records—legal documents, product designs, customer files and research notes—and could base their own knowledge management systems on these catalogs. But D'Alessandro says technologists often don't ask librarians and records managers, who are information management experts, to take the lead in designing new databases and interfaces. Her previous job was as the CIA's deputy CIO, so she knows firsthand that "information management is always overlooked by the IT side."

"I think we were invited as a courtesy," she says. "We have interjected ourselves and have tried to tie ourselves to the [technology] side" of the project. "We got in through the backdoor."

Agency officials agree that broader access to information by CIA officers might also help to prevent intelligence blunders. Jim Reid, chairman of the CIA's knowledge management steering committee, notes that getting "the right information to the right person at the right time" is a mantra in the agency. Neither Reid nor other officials interviewed for this article would provide specific examples of how knowledge sharing might have helped in past cases. But Reid did say part of the point of knowledge management is to prevent fiascos like the Chinese embassy bombing in the future.

For instance, says Reid, the metadata repository will point end users to a set of official maps. "If the map in there is wrong, you're going to see the wrong data," he says. "But it will solve the problem of someone having a map you don't know exists." **CIO**

Have any KM ideas you'd like to share? E-mail us at [casefiles@cio.com](mailto:casefiles@cio.com).

CRITICAL ANALYSIS BY TOM DAVENPORT

## Spy Versus Spy

**Ever see the movie *Enemy of the State*? In this (pretty decent) movie, Will Smith witnesses a murder by a U.S. senator and then has to outwit an intelligence agency with virtually perfect information on his whereabouts, vocal expressions, friends and family, and so on. It seemed to me that everything in the movie was actually possible if only the various data, information and knowledge bases at the agency were fully integrated and available in real-time.**

So as a law-abiding American citizen like Will, I am reassured by this case study of the Central Intelligence Agency. I'm reassured that the CIA is practicing knowledge management because we don't want the bad guys of this world to get away with too much. And I am reassured that the lack of informational integration and a sharing-oriented culture will make it impossible for the CIA or other intelligence groups to know too much about us anytime soon.

As knowledge management goes, the Central Intelligence Agency's approach is straightforward. We're talking about a repository for electronic documents with a browser-based catalog. As the case suggests, the idea of a catalog is as old as the library. And there is no cutting-edge technology involved here. Who knows, maybe the agency is holding back on the really good stuff.

As a knowledge repository, the CIA system seems to employ most of the regnant best practices. For example, it not only captures knowledge but also records the name of the individual who created it. In addition, it supplies some information about contacting that person. "Pointers to people," I call it.

This is enormously helpful, as it allows seekers of knowledge the ability to acquire some tacit knowledge along with their explicit items. It might include more detail on the source, relevance and limitations of the knowledge in the repository. Apparently at the CIA, it's pretty difficult to find out who knows what, with everybody wearing sunglasses, fedoras and trench coats, thus being largely invisible.

Perhaps the most unusual aspect of this knowledge application relative to other organizations is that the categorization scheme for knowledge at the CIA has endured without change for several years. Most companies have a more dynamic knowledge environment than that. For example, it's unlikely that the terms *business-to-business* exchanges, *m-commerce* and, for that matter, *knowledge management* would have appeared in most companies' lexicons five years ago.

And, of course, the CIA has more stringent policies for security than other organizations. When you do a query in this system, it returns only citations to documents you are allowed to see. I'm just speculating that if you stumble on a document that's not supposed to exist, perhaps your keyboard issues a massive electrical shock and you are liquidated.

Given the growing interest in information privacy, perhaps all companies will soon adopt approaches similar to that of The Company.



Tom Davenport is director of the Andersen Consulting Institute for Strategic Change and a distinguished scholar in residence at Babson College. He can be reached at [davenport@cio.com](mailto:davenport@cio.com).



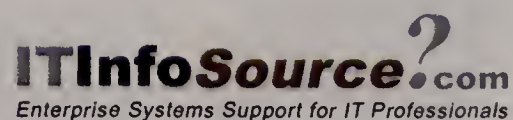
# RAGING Knowledge

Imagine

a knowledge management application  
so sophisticated, so powerful, so  
intelligent, that it can dynamically  
find, create, capture, and manage  
critical information across a  
global enterprise.

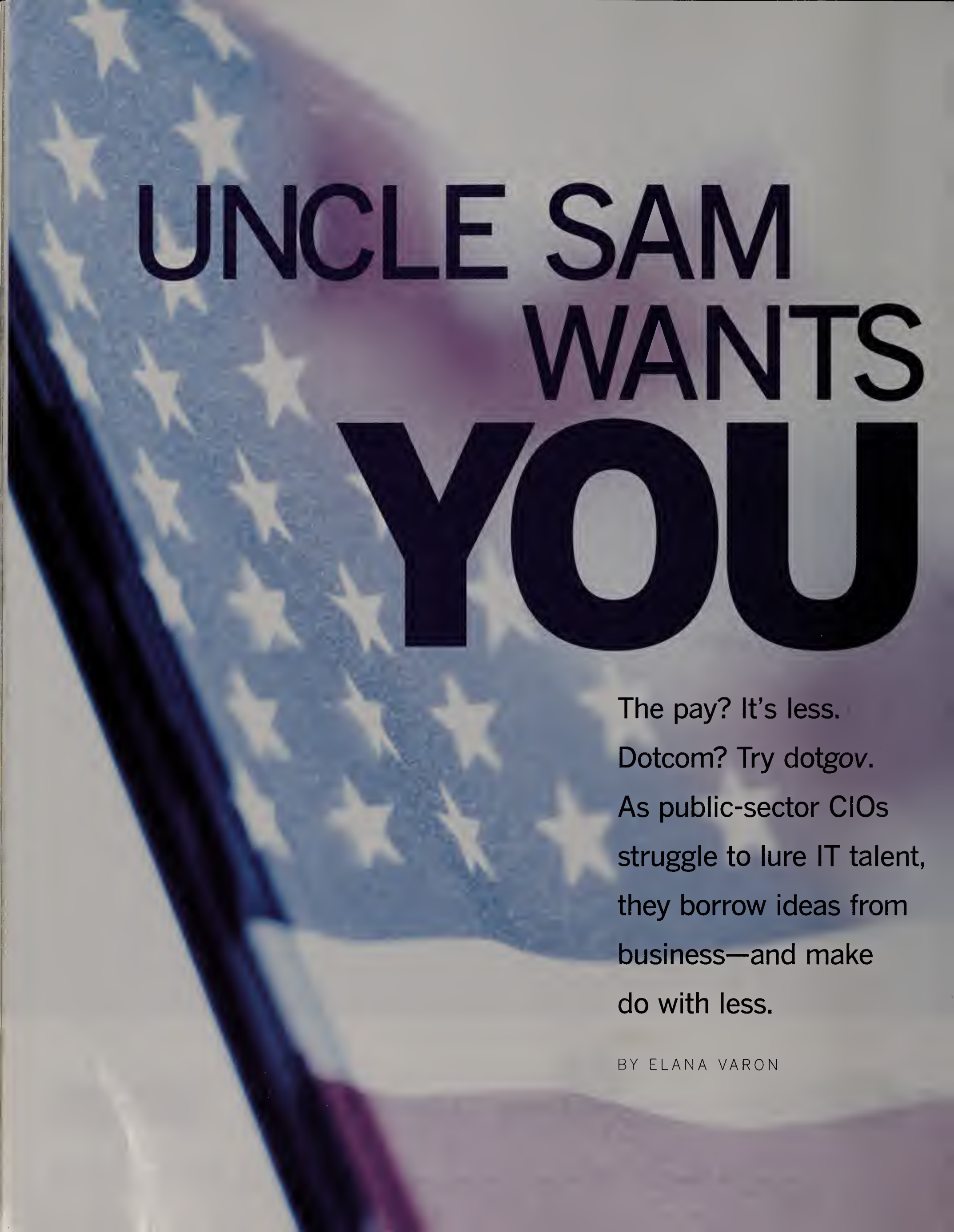
## The Raging Knowledge Solution

Raging Knowledge has adapted  
its technology into three  
primary product lines  
Global Knowledge Management,  
Customer Service and Support,  
Online IT Support.



For more information visit <http://www.ragingknowledge.com>, or call 203-838-6665.



The background of the entire page is a close-up, slightly blurred image of the American flag, showing the stars and stripes in shades of blue, white, and red.

# UNCLE SAM WANTS YOU

The pay? It's less.  
Dotcom? Try dotgov.  
As public-sector CIOs  
struggle to lure IT talent,  
they borrow ideas from  
business—and make  
do with less.

BY ELANA VARON



**T**HREE YEARS AGO, WHEN COMPANIES EVERYWHERE were competing frantically for mainframe programmers to fix the Y2K bug, Dan Stanley, secretary of administration for the state of Kansas, responded with a corporate solution: He gave key workers and new hires extra cash. Now, although the millennium bug has been vanquished, Stanley is still handing out bonuses to keep state IT salaries "in the ballpark" to ward off private employers that pay 15 percent more.

The incentives are working. Kansas has slashed its IT job vacancy rate by two-thirds. But there's a catch: The state won't budget any more money to pay the higher salaries, so Stanley has to leave many of the remaining jobs unfilled. "You just have to suck it up," he says of his approach. "The alternative is you have a lot more positions open."

Around the country, other government agencies are in similar straits. During the next four years, the U.S. government will be trying to hire about 37,000 IT professionals, more than half its current high-tech workforce, while states like Texas are confronting turnover rates of nearly 16 percent. With half of all high-tech jobs going unfilled, according to the Information Technology Association of America, government agencies, which don't have the lure of high salaries, stock options or dotcom glamour, must think creatively to reel in prospects.

#### Reader ROI

- ▶ Find out why the government IT staffing shortage is more acute than the private sector
- ▶ See which public sector tactics are effective in attracting IT workers
- ▶ Learn why a "revolving door" would help public-sector IT pros' careers





“You have to **suck it up**” and award bonuses. “The alternative is you have a lot more **positions open.**”

—Dan Stanley, secretary of administration, Kansas

To stay afloat, government agencies are borrowing recruitment and retention techniques from commercial companies, including awarding salary bonuses and making carefully targeted marketing pitches. They’re redesigning bureaucratic, industrial-age hiring and promotion practices, also to be more like the corporate world. And they’re beefing up training programs—as well as paying for college, graduate or technical school—to entice both entry-level workers and career changers and also to hold on to experienced employees who want new skills.

Meanwhile, they’re counting on some traditional perks of public employment, such as family-friendly work schedules, job security and the chance to contribute to the greater good, to attract applicants.

Will any of it work? Public-sector CIOs say these tactics must if they’re to meet taxpayers’ demands for 21st-century online government, much less keep their legacy systems humming. Their vision of one-stop shopping for government services—for example, allowing businesses to use one website to get permits and file regulatory paperwork rather

than having to go to multiple agencies—requires unprecedented back-end integration of existing applications and databases.

“If we don’t bring the right people on board, we can’t look at new systems development, reengineering processes and applying new technology,” says Gloria Parker, CIO with the U.S. Department of Housing and Urban Development, and cochair of the federal CIO Council’s Education and Training Committee in Washington. “To serve citizens, it’s very critical to bring on the right [talent].” Private companies that fail to modernize eventually go out of business. Government agencies may not face the same pressure to preserve the bottom line, but they can still pay, in loss of political support, for doing business in antiquated ways.

### MONEY ISN’T EVERYTHING, BUT IT HELPS

As Dan Stanley confirms, throwing money at employees is one way to keep them on board. Vincent Milich, a regional director with The Hay Group, a human resources consulting company in Philadelphia, says compensation is one of the top three factors influencing workers’ decisions to take a new job, tied with the potential they see for career growth and challenging work.

Not only do government agencies generally pay less than the private sector, Milich observes, but they also typically have rigid pay scales that limit their ability to tailor compensation to individual workers. “Corporations have more robust individual career ladders for IT,” he says. “In a government agency, you reach a certain level and only supervisory and managerial jobs [pay higher salary] levels.” Bonuses for workplace longevity, sought-after skills or stellar performance on a project are still rare.

At a U.S. Senate hearing on May 2, Roberta L. Gross, inspector general of NASA, told lawmakers that her agency was having an “extremely difficult” time recruiting network security experts to investigate computer crime because private-sector companies pay almost twice what NASA can offer and provide such



**GO IT ALONE** *trying to build and manage an e-commerce infrastructure for your business and you're facing the possibility of order mishaps, mishandled transactions and lost customer opportunities.*

ON-LINE SHOPPING NOW COMES IN TWO FLAVORS.

**PLUG IN TO ORDERTRUST** *and you're connected to an e-commerce service that kicks in the moment your customers press the buy button. Providing real-time credit card authorization and inventory checking, line-item routing, event-triggered e-mail and comprehensive order monitoring and reporting. OrderTrust even gives you point-and-click access to millions of products for your online catalog. To learn how OrderTrust can help you create a level of service that encourages customers to spend time and money at your site, call 800.254.3772 or visit [www.ordertrust.net](http://www.ordertrust.net).*

ORDERTRUST





benefits as stock options, which the government can't match.

Gross says inflexible hiring rules, which dictate how much training and experience candidates must have for any federal job, compound the problem. "A number of highly qualified information technology auditors with recognized credentials do not qualify for auditor positions under current guidelines," she told the panel.

Government CIOs concede that it's unlikely they'll ever match private-sector salaries. Lawmakers, at both the state and federal levels, are reluctant to increase pay for IT workers, either because of union pressure to pay all professionals equally or because higher salaries will make government look bigger to voters. Nevertheless, agencies are trying to revamp outdated hiring rules.

At the federal level, the U.S. Office of Personnel Management (OPM), in Washington is testing a new compensation plan that will tie IT salaries more explicitly to what employees can do. Today, federal salaries are determined largely by how long an employee has worked for the government (management experience also can be a factor). According to the current pay scale, an experienced systems analyst with no managerial responsibilities can't make more than \$93,500 a year, while private companies routinely offer such job candidates six figures. Most of the recent college graduates working for federal agencies can earn

an average of \$35,000 their first year of work. Under the newly proposed system, agencies will be able to set pay based on employees' specific skills and award raises for additional training.

As part of the planned overhaul, OPM is crafting new job titles that officials say will help agencies target workers who deserve premium pay, and eliminate one-size-fits-all qualification rules. Most federal IT workers today hold generic "computer specialist" or "telecommunications specialist" titles, with job descriptions that do not differentiate between programmers and project managers or allow agencies to weigh academic credentials against on-the-job training. The job-specific titles proposed for such functional areas as customer support, security and data management would help agencies target these kinds of positions for special pay rates, says Judy Davis, classification programs division chief at OPM.

#### IF YOU CAN'T BEAT 'EM, HELP 'EM

But government CIOs assert that, because they can't really compete financially, they have to sell new recruits, as well as current employees, on other benefits. Just as in the private sector, government managers believe that offering training on cutting-edge technologies, such as Java and ERP software, and letting employees work on major systems right

"If we don't bring  
the right people  
on board, we  
can't look at  
new systems  
development  
and applying  
new technology."

—Gloria Parker, CIO, U.S. Department  
of Housing and Urban Development.

## When Is Outsourcing the Answer?

*When government agencies can't do a project in-house, they consider outsourcing, just like commercial companies do. But as every CIO knows, that's not always the best solution.*

Government CIOs note that contracting out can be expedient and politically popular. "It's actually more politically palatable to ask for money to hire consultants," says Jan Grecian, deputy CIO for Missouri. Legislators don't mind spending money on contracts that provide jobs in their home districts, because

they believe the private sector can do the work for less. But increasing state salaries makes it look to the public like government is getting bigger.

"We'll never be staffed appropriately to do everything," says Aldona Valicenti, Kentucky's CIO. Her state has outsourced its telecommunications services as well as network maintenance in recent years. "There are some things we should not be doing ourselves," she says, such as designing "custom-tailored systems."

Outsourcing whole operations, or hiring a contractor to build new systems, may truly save an agency money, as well as alleviate staffing headaches. Congress has even ordered federal agencies to





away is their most important recruiting tool.

In a draft of a report that circulated in March, the U.S. General Accounting Office, which, among other things, advises federal CIOs on management, said leading companies and public agencies alike cite training as "a major nonsalary incentive for attracting and retaining skilled [information management] professionals." "The fact is that state government is a boot camp for the private sector," says Oregon CIO Don Mazziotti. Because agencies can't afford to hire the most experienced workers, young people get "great opportunities to do challenging projects early in their careers," he says.

Gaining new skills can also be attractive to experienced workers. Recently, Kansas lured Clydette Johnson away from her job in a consulting firm to work as a mainframe programmer with the promise of learning a new accounting system. Johnson, 54, says that promise wasn't the main reason she took the job—but it helped. The consultancy kept her so busy that she had no time for training. To make matters worse, the company was probably going to transfer her from Topeka, the state capital, to an office in Kansas City, which would have added more than an hour to her commute.

Earlier this year, Texas launched the Texas IT Academy, a training program that teaches IT skills to workers with no previous experience for entry-level state IT jobs.

publish lists of potential outsourcing opportunities, assuming that private companies can do the work for less. However, says Gloria Parker, CIO with the U.S. Department of Housing and Urban Development, it rarely pays to hire "one contractor here and one contractor there," because individual contractors cost more than in-house staff.

Oregon CIO Don Mazziotti says contractors fill "a good deal" of the state's IT staffing needs, but "you cannot give away core competencies." Every public agency has different ideas about what kinds of jobs need to remain in-house: Mazziotti needs state employees to provide central services, such as running data cen-

ters, and "you have to have full-time employees who can manage the contractors who used to perform the outsourced work."

Paul J. Cosgrave, CIO with the IRS, agrees. "There are things that are truly strategic [and] you want to have the skills in-house for [them], like in the private sector," he says. For Cosgrave, that includes skills that deal with computer security.

Paul Light, vice president and director of governmental studies with the Brookings Institution, says, however, that more outsourcing is likely. Agencies won't be able to compete with private-sector companies, he says, and "agencies will have no choice."

—E. Varon



In the week after the state announced the program in March, officials received 200 applications—a testament to the demand for high-tech education. (By the program deadline in May, 800 people applied.) After 12 to 14 weeks of intensive training, these workers will fill about 30 of some 800 IT vacancies in state agencies and universities, where they'll agree to stay on for two years. The first crop of recruits, who are expected to start work in the fall, will work in the

last year did so for job-related reasons including "inadequate salary" and "lack of opportunity for advancement."

Meanwhile, says Kimberlee Harper Han-ken, a research analyst who manages the Texas IT Academy project for the comptroller of public accounts, "if we do lose [newly trained employees] to the private sector, we're still contributing to the overall workforce development picture. As state agencies, we care about that as well." In fact, nearly

of a broad plan to protect the nation's IT infrastructure. (See "Red, White and You," *CIO*, June 15, 2000.) These are jobs government CIOs believe are critical for both preserving national defense and providing online services to citizens. "We need to do some promotion that the [training] programs are very satisfying and that you can have an impact on something that makes a difference in people's lives," Malia says.

Once new employees are on board, the

**"You're going to work definitely 40 but probably **not over 45 hours** a week. That **makes a difference** in your life."**

*—Clydetta Johnson, mainframe programmer, Kansas*

capitol building, in Austin, but the program may expand to other locations.

Texas officials aren't expecting all of those workers to extend their commitment beyond their two-year contracts, any more than private companies rely on employees' long-term loyalty. "We'll continue to compete and compete with the private sector," says Carolyn Purcell, director of the Texas Department of Information Resources in Austin. "If managers can take the time to find out what employees want and if it's possible to meet those needs, we'll be successful keeping them."

According to a study of state-employee turnover in Texas published in March, when IT workers left their jobs, only 19 percent continued to work for the government, but at other state agencies. The study, by the state auditor's office, reported that it was difficult to determine why the rest left the government, other than because of retirement, because data from the state's personnel system appeared incomplete. State statistics do show, however, that at least a fourth of all state workers who quit

three dozen private companies have joined the project's advisory board to have input on which skills the recruits are learning.

Shirley Malia, program manager for education and training with the U.S. Critical Infrastructure Assurance Office, says people don't think of government as "an employer of choice," particularly in the IT field. Trying to change that, Malia heads a new government program called the Federal Cyber Services Initiative. The program, for which President Clinton has asked Congress to budget \$11 million in scholarship funds next year, will train specialists in information security. Within three years, the government hopes to build a cadre of 300 undergraduate and graduate students a year to work for federal agencies for at least two years. Officials plan to award the first scholarships in September 2001 and bring the new recruits on staff in 2003.

Once trained, these recruits will be assigned to help agencies safeguard government networks from attacks and secure information held in agency databases about millions of citizens and corporations—part



PHOTO BY SCOTT INDERMAUR





- ⊕ 1 of 6 who started a \$520 million software company.
- ⊕ Oversees 12 teams of developers.
- ⊕ Remembers when programs were Version 1.0.
- ⊖ Network down for 4½ minutes while searching for technician.



*Nextel is dedicated to making your business more productive with Nextel Direct Connect,<sup>®</sup> our digital, two-way radio feature. It goes beyond cellular for the instant answers you need with the push of a button. Call Corporate Accounts at 1-877-NEXTELC or demo Nextel Direct Connect at [nextel.com/corporateaccounts](http://nextel.com/corporateaccounts).*

**NEXTEL**

How business gets done.<sup>™</sup>

©2000 Nextel Communications, Inc. All rights reserved. Nextel, the Nextel logo, Nextel Direct Connect, and How business gets done are registered trademarks and/or service marks of Nextel Communications, Inc. Motorola and i1000plus are trademarks and/or registered trademarks of Motorola, Inc.



government will have to “provide state-of-the-art training to keep their skills up to date” and to offer cutting-edge projects that keep them interested, she says. But Malia is realistic about the appeal of private industry, which is generating most of the demand for information security skills, noting that “Industry will benefit directly from the program.”

Government shouldn’t, however, stop at merely training young workers, who then jump to the private sector when their skills mature, says Maurice McTigue, distinguished visiting scholar at the Mercatus Center, a research facility at George Mason University, in Fairfax, Va. Agencies should look for ways to make it easy for employees to move back and forth between government and industry, as career opportunities arise. Job openings shouldn’t be “sinecures for current civil servants,” who often get preference under agency personnel rules,

says McTigue, a former minister of labor in the New Zealand government.

Although this is not the case everywhere, many public agencies tend to groom insiders—especially those in management—for senior jobs. “By growing our own management team, that shoots a very clear signal to other employees that they have opportunity here,” says Don Heiman, Kansas’s chief information technology officer. Besides, he says, there aren’t lots of vacancies for those positions. “When people come to Topeka, [they] tend to want to be here for personal reasons,” so they stick around.

“It’s better to promote from within, unless you’re requiring a special skill,” asserts Patricia Popovich, the U.S. State Department’s deputy CIO for management. She hopes some employees who recently signed on with the department will choose to become managers. Like other government agencies, the State Department is facing

potentially large numbers of baby-boomer retirements within the next few years. But Popovich says the need to recruit people with fresh technical skills outweighs the demand for new management blood.

“The federal government almost always gives the midcareer opening to the next in line,” says Paul C. Light, vice president and director of governmental studies at the Brookings Institution, a Washington think tank. Light’s recent book, *The New Public Service* (Brookings Institution Press, 1999), concludes that public-spirited professionals would rather join private contractors or nonprofit groups that do government work than become federal employees. OPM officials counter that agencies aren’t required to promote from within, but the government’s central personnel office also doesn’t compile data about deals agencies have with employee unions to do just that.

Donna Gregory, director of OPM’s nation-

## A Few Good Ideas *Some strategies that state and federal CIOs pursue to attract workers*

**STATE GOVERNMENTS** In **Kansas**, new hires can receive a signing bonus of up to \$3,000 in return for a one-year contract with the state. Current employees with mission-critical skills in networking, database support and software development, among others, can get bonuses of up to 13 percent of their salaries. Other bonuses are available for learning needed skills, completing key projects and recruiting employees from the private sector and some local government jobs.

**Kentucky** runs general help wanted ads, rather than advertising only for specific job openings. The state has also eliminated tests for certain IT job classifications. With a possibility that 40 percent of IT workers could retire within the next few years, the state has changed personnel rules so that new employees can be hired and trained before retirees leave. In addition, Kentucky is considering a proposal that would pay off student loans for recent college graduates who work for the state for five years.

**Missouri** uses the Information Technology Coalition, a partnership with private sector employers in state capital Jefferson City, to advise local colleges on courses students need to qualify for state and corporate IT jobs after graduation.

**Oregon** plans this fall to open a new technology training center where state employees can learn new technical and project-management skills. Oregon expects to provide courses to an aver-

age of 10,000 state employees during the next two years.

The **Texas** IT Academy offers intensive training for IT jobs in exchange for a two-year commitment to entry-level positions in state agencies. Initially the jobs are only in Austin, but the program may expand to other locations. Training for management jobs or for work in specific state IT projects is also being considered.

**FEDERAL GOVERNMENT** **Federal Cyber Services** has a Scholarship for Service program that provides two-year scholarships to undergraduates and graduate students who study computer security in exchange for federal government service. In another program, the Centers for IT Excellence, the government also plans to approve training programs that offer continuing education to federal employees.

The **State Department** offers recruitment bonuses of up to 25 percent of salary to new hires with needed skills. Current employees can receive retention bonuses of up to 15 percent.

The **Commerce Department** has hired Women in Film, a Los Angeles nonprofit group that promotes women in media, to produce two public-service announcements that dispel the nerdy image of IT professionals and to encourage teenagers to choose high-tech careers.

—E. Varon





## *Send-off Party Thursday!!!*

Please join us (at the usual place) to say goodbye to...

### *Status Quo*

Those of you who have been around for awhile  
know what Status Quo has meant to this place.  
Through all the ups and downs, Status Quo was  
always there. So let's raise a glass this Thursday  
and wish Status Quo good luck.

Things just won't be the same around here.



If you're looking to say goodbye to business as usual, then say hello to us. At GENUITY,<sup>™</sup> we can help you use the Internet to reinvent the way your company does business. As BBN, we originally brought you the Internet. Now as an e-business network provider, we leverage that experience to design, build and fully manage your network infrastructure. So you can reduce costs while increasing productivity and speed to market. See, change is a good thing.

©Copyright 2000 Genuity.

Genuity is a trademark of Genuity Inc.

Proud underwriter of CIO Magazine's  
Enterprise Value Awards

# GENUITY<sup>™</sup>

1-800-GENUITY [www.genuity.com](http://www.genuity.com)



wide examining policy office, notes that for the past five years—during which IT workers became a hot commodity—most federal agencies were shedding workers as a result of

downsizing plans. Personnel rules required agencies with job openings to give preference to anyone who was laid off from another government job.

**“It’s better to **promote from within**, unless you’re requiring a special skill.”**

*—Patricia Popovich, deputy CIO for management, U.S. State Department*



## SELL WHAT YOU’VE GOT

In the end, government agencies, just like private companies, need a compelling business proposition to attract employees. Private companies sell their prominence in their industry and the role technology plays in maintaining their position, says Rich Brennen, managing director of the information technology practice at Chicago executive search company Spencer Stuart and Associates. Government can promote “the sexy project,” Brennen says, something “you can do only in government because of the scale.” Agencies also try to market more general benefits.

“You would be surprised to learn, probably, that people still believe in public service,” says Texas’ Purcell. In addition, she says, “the kinds of jobs that are in startup environments and in some of these software companies have very demanding schedules,” while state agencies offer a “less frantic” environment. Furthermore, “state government still provides a robust benefits package.”

In Kansas, Clydetta Johnson, who left a more lucrative private-sector consulting position, says that not only does her state job offer her the chance to keep her short commute and learn some new skills, but it also provides other lifestyle benefits. After years of working 60 or more hours a week, she now works “probably not over 45” and has more time to spend with her husband and grandchildren.

There are even some glamorous IT jobs in government, and CIOs are beginning to learn how to sell them. Last year, for instance, the State Department lured about 170 new hires to fill vacancies at American embassies around the world with a newspaper ad enticing workers to “Go Global.” Popovich says that before the ad campaign that promoted two job fairs, the department hadn’t put much effort into recruiting IT workers directly into the foreign service, although that is how the agency staffs most other embassy jobs. At the first job fair, in February 1999, 1,500 prospects showed up to apply for 250 jobs.

One of them was Wendy Elliott, who was

PHOTO BY KATHERINE LAMBERT



## New Jersey man attaches sucks.com to over 500 respected domain names

By Michael Mullen

How could a small office above a bagel shop in a New Jersey strip mall stir the ire of so many powerful CEOs? Ask the man sitting in that nondescript New Jersey office, who so far has spent over \$100,000 to register the domain names of more than 500 of the world's largest companies using sucks.com as a suffix.

Apparently, the goal of sucks.com is to let consumers, employees, and others rant, rave and otherwise vent whatever ill feelings they have had with the company. Unfortunately, the man who owns sucks.com

## THE SCARY THING IS, HE'S JUST GETTING STARTED.

How can you begin to maintain your domain names when others are trying to infringe on them? Ask idNames™ from Network Solutions®. idNames is the world's most experienced domain name management provider, with a full range of services that search, register, maintain and secure your Web Addresses in over 192 countries. No wonder over 500 leading companies depend on idNames to help protect their Web identities. Call us to find out how we can help protect yours.

FOR COMPREHENSIVE DOMAIN NAME MANAGEMENT, CONTACT:

[www.idNames.com](http://www.idNames.com) 1-800-idNames +1 713-974-0069

(outside the U.S.)



**idNames™**  
from NETWORK SOLUTIONS®



getting restless after more than 15 years as a systems analyst for the Virginia Beach, Va., city government. Over the years, Elliott had vacationed often in the Caribbean and Mexico but had dreams of places farther afield, such as Chile, Zimbabwe and the Pacific islands. "There's a big difference between going on vacation for two weeks and spending two or three years in a culture learning their ways," she says.

Elliott signed on, and she'll be leaving in October for her first posting at the U.S. embassy in Kigali, Rwanda, doing "anything and everything" to support its telecommunications and computer systems. Though Elliott's new salary (\$49,100) marks an 11 percent pay cut, other perks more than make up the difference: a 15 percent recruitment bonus, a foreign service living allowance and an automatic promotion and salary hike after one year. Plus there's the chance to receive her advanced-systems certification that would give her another 15 percent pay raise. What's more, she says, "I spent two weeks learning about sub-Saharan Africa, and I'm getting eight weeks of French lessons. I never got that in my other job."

Even the IRS has a good story to tell. IRS CIO Paul J. Cosgrave, himself a former industry executive at Claremont Technology Group, concedes that the agency, which has stumbled repeatedly on the way to modernizing its 1960s-era IT architecture, has a reputation for technological backwardness. But that's changing in ways that offer IT workers the chance to work on exciting projects, he says. "We have the single most popular website in the country, aside from the portals. We're looking aggressively to expand our electronic filing," he says. "We are doing some of the neatest technology."



**"I'm getting eight weeks of French lessons. I never got that in my other job."**

*—Wendy Elliott, IT staffer, U.S. State Department*

Despite the promise of sexy new systems and exciting travel to exotic locales, Light, of the Brookings Institution, is more pessimistic about recruiting IT professionals for public-sector jobs. "The market is so hot that it is not clear what government can do other than outsource IT functions entirely," he says. "And I might argue that the people

who take jobs in the private sector delivering on those contracts are just as much in the public service as those who used to do the same jobs in-house." **CIO**

Do you have ideas for how government agencies can staff up? E-mail them to Senior Writer Elana Varon at [evaron@cio.com](mailto:evaron@cio.com).





CIO MAGAZINE'S ANNUAL SYMPOSIUM & AWARDS

100

# Leadership & Innovation for the Future of the Enterprise

## **SYMPOSIUM MODERATOR**

**Geoff Moore, Founder  
and President  
The Chasm Group**

## **FEATURED PRESENTERS**

**Mike Vance, Author  
*Raise the Bar***

**Wesley K. Clark  
Four-Star General  
United States Army**

**Katherine Hudson, CEO  
Brady Corporation**

**Scott Nason, CIO  
John Samuel, VP,  
Interactive Marketing  
American Airlines**

**John Puckett  
CTO & CIO  
toysmart.com**

**CIO Communications, Inc.**

CIO 100 Symposium & Awards™ is a  
servicemark of CIO Communications, Inc.



**AUGUST 13-16, 2000**

**HOTEL DEL CORONADO SAN DIEGO, CALIFORNIA**





CIO MAGAZINE'S ANNUAL SYMPOSIUM & AWARDS

100

*"One of the best  
Symposium/conferences  
that I've attended."*

Jerry Rode, CIO, Saab Cars USA

#### **PARTNERS**

Booz•Allen & Hamilton

Candle Corporation

Citrix Systems, Inc.

Compaq Computer Corporation

Computer Associates International, Inc.

EDS

Gateway Business

GTE Communications Corporation

Infonet Services Corporation

Infosys Technologies

Novell, Inc.

Partnerware, Inc.

PeopleSoft, Inc.

Predictive Systems

Tivoli Systems

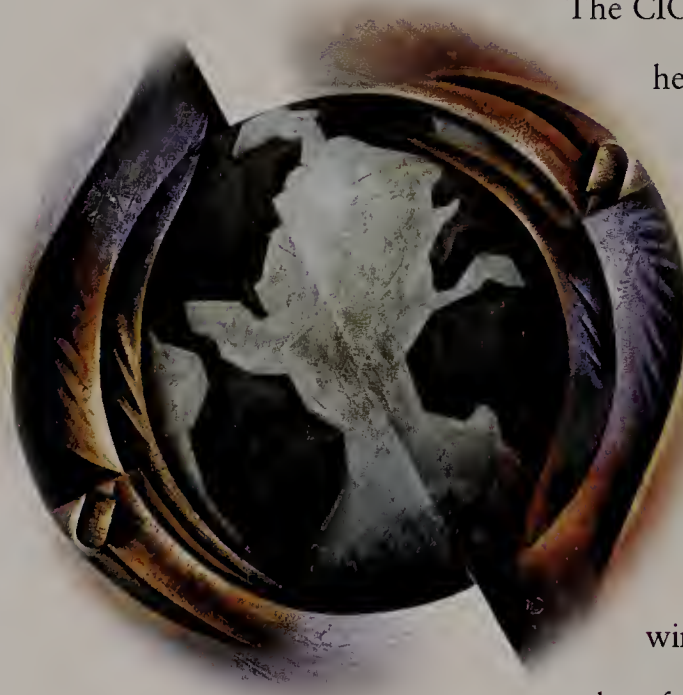
*Proud underwriter of  
the CIO 100 Awards*

**COMPUTER  
ASSOCIATES**  
*Software superior by design.*

**CIO Communications, Inc.**

CIO 100 Symposium & Awards<sup>SM</sup> is a  
servicemark of CIO Communications, Inc.

## Leadership & Innovation for the Future of the Enterprise



The CIO 100 Symposium, an annual program

held in conjunction with the *CIO 100*

*Special Issue* of CIO Magazine,

recognizes *Leadership and*

*Innovation for the Future of*

*the Enterprise*; and honors the

outstanding achievements of 100

industry-leading organizations.

This year's CIO 100 award-

winning companies are leaders in the

realm of customer relationship management

(CRM). By utilizing a combination of technology and innovative customer service strategies, these leading companies have effectively increased their market share and built loyal customer bases.

Geoff Moore, founder of The Chasm Group and author of *Living on the Faultline: Managing for Shareholder Value in the Age of the Internet*, returns as our Symposium moderator. Over three days, 400 CIOs, CEOs and senior executives engage in interactive presentations and thought-provoking discussions. Participants learn the latest results on the B2B marketplace, how to develop the best Internet security plans, and award-winning CRM strategies. The Symposium ends with a presentation on the importance of leadership abilities by retired Four-Star General, Wesley K. Clark.

**To enroll or for more information, call 800 355-0246 or  
visit our Web site at [www.cio.com/conferences](http://www.cio.com/conferences)**





**Geoffrey Moore**  
Founder and President  
The Chasm Group



**Wesley K. Clark**  
Four-Star General  
United States Army  
(Ret.)



**Katherine Hudson**  
President and CEO  
Brady Corporation



**Scott Nason**  
Vice President and CIO  
American Airlines



**John Puckett**  
CTO and CIO  
toysmart.com



**John Samuel**  
Vice President  
Interactive Marketing  
American Airlines



**Mike Vance**  
Chairman and  
Co-founder  
The Creative Thinking  
Association of America

## AUGUST 13-16, 2000 • SYMPOSIUM PREVIEW

### SUNDAY, AUGUST 13

#### Registration

#### Riverwalk Golf Tournament

CIO hosts a golf tournament at the Riverwalk — San Diego's newly redesigned championship golf course.

#### Café 100 Reception

Meet other participants, Award honorees and Symposium Partners in our informal living room.

### MONDAY, AUGUST 14

#### Registration and Breakfast

#### Opening Remarks and KnowPulse<sup>SM</sup> Poll

Gary Beach  
Group Publisher  
CIO Communications, Inc.

Be sure your views are represented in this groundbreaking poll.

#### CIO 100 Introduction and Welcome SYMPOSIUM MODERATOR

Geoffrey Moore  
Founder and President  
The Chasm Group

One of the world's foremost high technology gurus, Moore returns as the CIO 100 Symposium moderator and kicks off the program.

#### Culture on the Fault Line: How Large Companies Can Be Nimble in Technology-Enabled Markets

Moore provides new models to help analyze and change current business practices to meet and surpass the challenges of the marketplace.

#### Luncheon

#### From No to Yo! Making the Transition from CIO to CEO

Katherine Hudson  
President and CEO  
Brady Corporation

Katherine Hudson is president and CEO of Brady Corporation, a \$471M international manufacturer of identification and material solution products. Prior to Brady Corporation, Hudson was CIO of Kodak. Hudson discusses the advantages and disadvantages of being a CIO and how this affected her next step to CEO.

#### Industry Briefing Sessions

The Symposium Partners lead informative and innovative industry briefing sessions giving you the latest pulse on the information market.

#### Case Studies Highlighting the Latest Results on the Business to Business (B2B) Marketplace

Find out what the challenges are in forming these exchanges. Identify the success factors for these different trading models; how are they attracting suppliers and what are the long term benefits?

#### B2B PANELISTS

David Giometti  
Vice President of Vendor Relations  
Sears, Roebuck & Co.

Roberta Kowalishin  
Vice President of Technology Ventures  
CheMatch.com

#### Café 100 Reception

### TUESDAY, AUGUST 15

#### Breakfast

#### Day Two Kickoff and Executive Exchanges on Customer Relationship Management

Moderator Geoffrey Moore  
Founder and President  
The Chasm Group

Customer relationship management (CRM) has become the mantra for organizations that want to move past cost-cutting measures to achieve growth, increase market share and build customer loyalty. Moore leads a discussion on the current CRM marketplace and its effect on the Internet, and sets the stage for an Award honoree presentation.



#### EXPERIENCE The Famous Hotel del Coronado

A perfect place for a working vacation, the del Coronado offers a relaxing setting to reflect on lessons learned and actions to take when you get back to the office.

#### Learn How American Airlines Soars to Meet Its Customers' Needs

Scott Nason  
Vice President and CIO  
American Airlines

John Samuel  
Vice President, Interactive Marketing  
American Airlines

A CIO 100 Award honoree, American Airlines has been a pioneer in utilizing technology to effectively meet its customers' needs. Scott Nason, vice president & CIO, and John Samuel, vice president of interactive marketing, share how they continually personalize their services to satisfy customers and increase revenues.

#### Fostering Creativity and Originality in Our Organizations

Mike Vance  
Chairman and Co-founder  
The Creative Thinking Association of America

Vance engages us in a lively discussion on how to cultivate continuous innovation and creativity in our organizations.

Through scores of dynamic and oftentimes humorous real life examples, participants learn how to apply these key strategies in their workforce and careers.

#### Luncheon

#### Executive Mindshare Sessions

Led by senior CIO Editors, these small intimate groups exchange experiences and solutions on the following topics:

- Developing and Refining Your E-Business Strategy
- Business to Business E-Commerce Success Stories
- Fostering Innovation in Your Organization
- Maximizing the Customer Relationship
- Leadership: New Economy, New Challenges

Bring ideas, questions, concerns and actual examples to the sessions.

#### Café 100 Reception

#### CIO 100 Awards Dinner and Ceremony

All participants are invited to attend a special black tie reception, dinner and awards ceremony on Tuesday evening recognizing this year's CIO 100 Award honorees. The "Oscars" of the IT industry, the event features champagne, a six-course gourmet dinner, and a presentation of the CIO 100 Award to all honorees.

### WEDNESDAY, AUGUST 16

#### Breakfast

#### KnowPulse Poll Results

Lew McCreary  
Editorial Director  
CIO Magazine  
Editor-in-Chief  
Darwin Magazine

#### After the Business Plan: Internet Security

John Puckett  
CTO & CIO  
toysmart.com  
Co-Chairman  
Private Sector Council

John Puckett, co-chairman of the Private Sector Council in Washington D.C. and CTO and CIO of toysmart.com, addresses security threats. Are they real? What measures can be taken to achieve an acceptable level of security? Puckett also outlines how the best security plans and policies should be developed.

#### Leadership in the Age of Promise

Wesley K. Clark  
Four-Star General  
United States Army (Ret.)

Wes Clark, former Supreme Allied Commander of Europe, possesses one of the nation's most distinguished and significant records of military service. His leadership experiences have taken him from Vietnam to Latin America and ultimately to the position of NATO's Supreme Allied Commander. In this session, Clark presents a dynamic view of leadership based on honor, conviction and action.

#### Summary and Closing Remarks

Moderator Geoffrey Moore  
Founder and President  
The Chasm Group





CIO 100 Symposium and Awards<sup>SM</sup>  
August 13 - 16, 2000  
Hotel del Coronado  
San Diego, CA

Please attach business card here  
(required)

TAV1

## Enrollment Application

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_  
Title: \_\_\_\_\_ Facsimile: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_ Mail Stop: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
E-mail Address: \_\_\_\_\_ Web site URL: \_\_\_\_\_  
Name as you want it to appear on your badge: \_\_\_\_\_  
☐ I will bring a companion at the cost of \$350. Name of my companion: \_\_\_\_\_  
(Please note Companion Program details under enrollment fees)

### What Is...

Your primary industry? \_\_\_\_\_  
Your organization's annual revenues or assets? \_\_\_\_\_  
Your annual IT budget? \_\_\_\_\_

### Enrollment Fees:

#### ☐ \$2,900 IS Practitioner/Executive

Please make your hotel reservations immediately by calling the Hotel del Coronado at 619 435-0011. To receive the discounted rate, please mention that you are attending the CIO 100 Symposium when making your reservations. This fee does not include hotel.

#### ☐ \$3,515 Government/Military

This fee includes your hotel for three nights. CIO will make your hotel reservations for arrival Sunday, August 13 and departure Wednesday, August 16. Additional hotel reservations are your responsibility.

#### ☐ \$350 Companion Program

This fee includes all scheduled meals, receptions and entertainment, companion breakfast, planned companion activities and the CIO 100 Awards Ceremony. Companions are not eligible to participate in the golf tournament or Symposium sessions. Companions must be enrolled in this program to attend any Symposium function.

#### ☐ \$10,000 Sales/Marketing/Consulting

This fee applies if you hold a sales, marketing, business development or consulting position, including executive management of IT vendor and consulting companies. This enrollment fee is payable by company check only and does not include three nights hotel. CIO will make the final determination of this category.

### Payment:

☐ Check enclosed  
☐ P.O. # \_\_\_\_\_  
(A complete purchase order must be submitted within 10 business days.)  
☐ MC / Visa / Amex (circle one)  
Acct. #: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Exp.: \_\_\_\_\_

All fees must be paid prior to the Symposium, and all cancellations and changes must be made in writing. You may cancel your Symposium attendance up to July 7, 2000 without penalty. A \$500 administration fee will be imposed for cancellations received between July 8 - July 28, 2000. No refund or credit will be given for cancellations received on or after July 29, 2000 or for no-shows. CIO reserves the right to limit attendance to practitioners and Partner organizations.

To enroll or for more information, call 800 355-0246, fax back to 508 879-7720,  
or visit our Web site at [www.cio.com/conferences](http://www.cio.com/conferences)





# CIO100

CIO MAGAZINE'S ANNUAL SYMPOSIUM & AWARDS

Leadership & Innovation  
for the Future of the Enterprise



Allen & Hamilton  
Corporation  
Systems, Inc.  
Computer Corporation  
er Associates International, Inc.

y Business  
Communications Corporation  
Services Corporation  
Technologies  
Inc.  
ware, Inc.  
oft, Inc.  
ve Systems  
ystems

nderwriter of  
100 Awards

**MPUTER<sup>®</sup>  
OCIATES**  
superior by design.

mmunications, Inc.

mposium & Awards™ is a  
k of CIO Communications, Inc.

AUGUST 13-16, 2000 • HOTEL DEL CORONADO • SAN DIEGO, CALIFORNIA

To enroll or for more information, call 800 233-1111  
visit our Web site at [www.cio.com/conference](http://www.cio.com/conference)





## Babson's IT leadership program takes technologists on a fast-track ride

BY TRACY MAYOR

### "OK. Hands. Who here has had a project killed?"

#### Reader ROI

- ▶ Learn how IT managers can develop deeper business vision
- ▶ Discover what they need to know to function as strategic executives
- ▶ Realize the value of executive-level training

Professor P.J. Guinan's gaze sweeps over the 15 students gathered in the intimate amphitheater at Babson College one chilly morning last spring. "Tell the truth," she adds in mock-menace, lowering an eyebrow at the group.

Some hands go up. The other students offer sympathetic smiles. The classroom is filled with senior-level IT managers, each with many years under their belts, many people in their report and many dollars in their budgets. They know where Guinan





**P.J. Guinan kept her students on their toes but made them feel safe enough to speak their minds.**





Lucent Technologies' Sherry Higgins and Dave Kulpa (left and right) share their knowledge with CIO Joe Warfsman.

is going. "I've got a couple that should be killed," offers one mid-career technology manager with more than 20 years' experience and a department of thousands. His classmates nod and laugh. They've all been there. "That's good news," exclaims Guinan, bringing home her point. "We should value a corporate culture that kills projects. It's a sign that you're on the right track."

It's day four of the inaugural Entrepreneurial Leadership Development Program for IT Professionals at Babson College in Wellesley, Mass. By this point, Guinan's exhortation for honesty is redundant. With just two weeks (the first week was March

26-31; the second was June 18-23) to hone their visionary business thinking skills, students have bonded quickly. This is an intense, high-stakes environment where they have a lot to prove, both to one another and to the senior managers and CIOs who not only helped design the program but also hand-picked them to attend.

"By Tuesday, we were already saying to each other, 'Have we only been here two days?'" says attendee Sherry Higgins, a director of project management who has been with Lucent Technologies for 28 years, long before it was even called Lucent. She's been in the IT field for 17 years, and currently

works in Lucent's Hampton, Ga. office. "P.J. set up an environment where people felt very comfortable. We were all sarcastic and kidding and open," she says.

In a program this focused, the students need all the jokes they can get. With just five companies invited to participate, a select group of professors, evening assignments every night and the conspicuous absence of extracurricular diversions like tee times, the aim is clearly to go deep. The goal is to turn IT technologists, all of whom are designated as executive-caliber players, into strategic change agents within their organizations.

The entrepreneurial twist is a particular





The e-business transition team: Four regular suppliers. Thirty-nine



project contractors.

Three outside consultants. Eighty



full-time IT employees.



Nine temporary programmers.

One person



answers to upper management:



You.

When IT projects reach jumbo proportions, there's only one way to keep from getting run over: Changepoint for Enterprise IT. Essential for the transformation to e-business, our integrated Web-based corporate IT management solution integrates both internal and external resources, and empowers you with the tools to centrally manage, automate, measure and track critical process throughout your IT Services Supply Chain. Who, what, when, where, how much – you'll get fast answers to your questions for better results and more effective decision-making at every level of corporate IT management. Visit us online at [www.changepoint.com](http://www.changepoint.com) or call 1-800-263-7189.

**Changepoint™**

STRATEGIC TECHNOLOGY FOR FEARLESS IT LEADERSHIP.

Register for a variety of upcoming Changepoint Webcast Seminars at <http://www.changepoint.com/webcast> or call us at 1-800-263-7189.



necessity for IT, says Guinan, faculty director for the new program and an associate professor of math, science and management. It's also a specialty of Babson's School of Executive Education, which is ranked by *Business Week* as tops in the nation in teaching entrepreneurs. "These days, all large organizations have to be as fast and flexible

utive education marketplace, says Thornton May, corporate futurist with Cambridge Technology Partners, a Cambridge, Mass., management consultancy and systems integrator. Companies in the top 25 percent of what the consultancy calls the New Economy—companies that are technology-enabled and reliant on a digital value chain—

quickly and found common ground early on. We found we could speed things up and cover more ground."

After a three month hiatus following the first week to regroup, decompress and begin work on their business challenge projects, which are designed to mold what they've learned into real-world business solutions, students reconvene in mid-June for week two of the program. The second session covers change management, negotiation skills, strategic cost analyses and ways to create innovative products.

For the business challenge projects, the Lucent team of Sherry Higgins and Dave Kulpa are working on a proposal to redesign the order-management experience for one of Kulpa's biggest customers. Chris Hogg and his two colleagues from Houghton Mifflin are looking for a way to extend and modify the publisher's supply chain to accommodate alternate means of content delivery, such as e-books, print-on-demand textbooks and text-to-speech solutions. Mike Langlois and John Herrera of EMC are considering how to revamp the IS group to become more closely aligned with the customer. The CIOs are scheduled to return on the last day of the program. This time, their student teams will pitch the business challenge projects as they would in a boardroom setting.

### Hear from Your Peers

Instead of parading a cast of experts before the group, nearly all of whom have attended other executive education seminars, Guinan and the rest of the course-development team chose to limit the number of professors. They also limited the number of participating companies sending students. They were hoping to enable the professors to form personal relationships with every student and customize their teaching for the specific strategic requirements of each participants' organization. Within this framework, the students became each other's experts. (See "Valley High: Thought Leadership 101," Page 156, for details on an IT lead-

## In pacing, sequencing and tailoring their material to individuals' business requirements, the instructors strive to create "stretch moments."

as small companies, but it's even more important for folks in IT," she says. "These people are developing systems on Internet time. If they're going to be taken seriously by their business people, they have to know how to break down barriers and deliver under extreme pressure."

The CIOs of the five companies participating in the charter two-week consortium appreciate this approach. "Lucent is a large company, but there are a lot of businesses within Lucent where there is an opportunity to use entrepreneurial experience," says Joe Warfsman, Lucent's CIO and vice president of strategy, communications and knowledge management. He recommended Sherry Higgins and two other Lucent employees for the seminar. "Entrepreneurial companies can hit the market and move quickly, and it's that spirit that we want them to bring back," he says.

Mark Mooney, senior vice president and CTO at Houghton Mifflin, also sees the value in Babson's approach. "We are looking to change our culture to become less reactionary and to be able to compress the time it takes for us to do things," he says. "We're interested in a more entrepreneurial culture and Babson is known for that."

While the entrepreneurial thrust of Babson's IT consortium isn't particularly innovative, it fills a critical need in the exec-

have already aligned IT with their business strategy throughout the enterprise, he observes, but the rest could benefit from a program like Babson's. "The geek/suit divide is disappearing fast, and it needs to disappear," he says. "A program like this is perfect for the remaining 75 percent of the marketplace that hasn't yet made that shift."

### Full Days, Long Nights

One thing is certain, the program has a full schedule. Following a kickoff session attended by the CIO or CTO from each of the participating companies, the students buckled down to dissect and discuss topics such as: supply chains, strategic positioning, opportunity assessment and recognition, marketing strategy, the customer value proposition, organizational structure, emerging business models and e-commerce. A site visit to e-tailer Streamline.com, hands-on Web-based projects, nightly case studies and other readings were also on the docket.

"P.J. and I have more material ready for every class section than we can actually use. We see how fast people go, then try to push them," says Martin Anderson, codirector of Babson's Center for Business in the Networked Economy and the second of three professors who handled the first week's classes. "This particular group gelled



# is it:

the shippers?

the exchange rate?

or something you  
haven't even thought of.

Intuition only goes so far.  
Software from Hyperion lets  
everyone know exactly what's  
happening and what to do next.  
So they can solve problems, not  
create new ones. And not waste  
time in the process.



Hyperion®

what's going on

[www.hyperion.com](http://www.hyperion.com) Nasdaq: HYSL



ership program that favors expert input.)

"The participants do most of the talking," says Dave Kulpa, CIO of Optical Networking, a business-within-a-business at Lucent's North Andover, Mass., facility. "The professors would present an idea or break down a case study that we'd read the night before, but then it was us discussing

what's going on in our businesses and playing off of each other's ideas." Some of those ideas came to Kulpa from Lucent colleague Sherry Higgins, whom he had never met. The two knew of each other's work, but came face-to-face for the first time at Babson. This was common among attendees from larger corporations.

Guinan and Anderson also speak of a second, emotional component that plays as crucial a role in the success of the program as the carefully developed curriculum. In pacing, sequencing and tailoring their material as specifically as possible to individuals' business requirements, the instructors strive to create what Guinan calls "stretch moments."

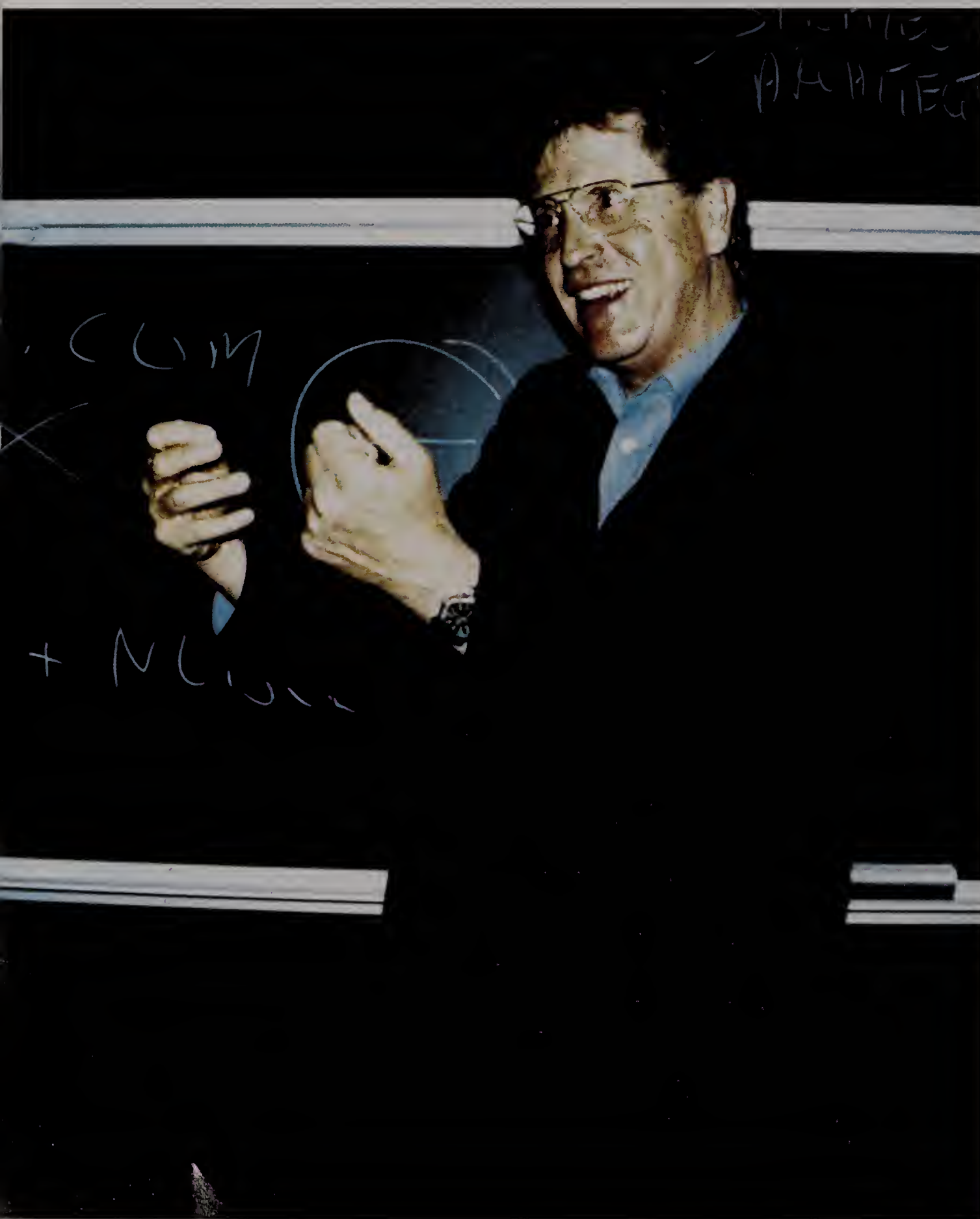
Anderson calls these "leadership moments," but the meaning is the same. These are times when students make a cognitive leap and begin thinking outside the box to develop the kind of visionary ideas that make IT matter within their organizations. "There is an emotional map across the whole process. The goal is to create a very intense connection between the material and students' own experiences," Anderson says.

The giving atmosphere that Higgins and the other students so appreciated is part of that environment, according to Guinan. "As a professor, my goal is to build a stretching environment, but also a risk-free environment," she says. "I want to keep people on their toes, but they need to feel safe to say what they have to say."

### Different Zoo, Same Animals

At first glance, it isn't obvious what IT managers from Lotus Development might have to share with their colleagues at Houghton Mifflin, the more than 150-year-old publishing concern. An old-line financial services company like MetLife might not seem to have much in common with computer memory hardware and

**Martin Anderson worked with Guinan to help students make a cognitive leap.**







# Cool Things ken, *eJiva* chief strategist has done:

Developed and deployed a web strategy that increased sales from \$10,000 a month to \$1 million *a day* and web customer base from 0 to 8,000, while expanding order size by 25%. . .in less than 24 months.

## Need More Cool? Feel Free to Add an Earring.

What's cool? To us at eJiva, it's moving your company from bricks and mortar to clicks and mortar. Going far beyond fancy designs and bits-and-pieces of technology wrapped up in a Web page. Creating real solutions that unlock your intellectual capital and improve your bottom line, like Ken did.

And we do it every day. In manufacturing facilities and offices just like yours. We work with you to clarify your issues and develop the strategies to give you a competitive edge that leaves the competition in the dirt. Then we work with your people—from C level to the shop floor—to give them the tools and skills they need to do their jobs better, smarter, more responsively.

We think that makes us pretty cool folks. But, you don't have to take our word on it. You'll see us everyday, working until you're satisfied, with a "no surprises" fixed-time, fixed-price agreement.

So, what's your idea of cool? Working with an e-services firm who really knows how to transform your business to an e-business and makes things happen on time, on budget? Or working with one that acts cool and leaves you cold?



Penn Center West III Suite 320 Pittsburgh, PA 15276  
1.877.eJiva.com (p) 412.249.2300 (f) 412.249.2351 [www.eJiva.com](http://www.eJiva.com)

Dallas • Sydney, Australia • San Jose • Los Angeles • Pittsburgh • St. Louis • Tampa





**IT executives from Houghton Mifflin Mark Mooney, Kevin Cole, Chris Hogg and Keith Schnebly (clockwise from left) found counterparts from disparate industries facing the same issues.**

software maker EMC, but students and CIOs from these companies (which, along with Lucent, comprised the five companies attending this first program) say that when it comes to strategic alignment, all companies face the same pressures to identify opportunities, fulfill customer needs, manage the value chain and sustain a flexible, innovative corporate culture.

"We discovered that publishing and high-tech have some very similar problems," says Mike Langlois, director of client services at EMC in Hopkinton, Mass. "We came from totally different corporate perspectives in terms of age, culture and orientation, but it turns out that Houghton and EMC are facing the same kinds of issues."

"One thing I found out was that everybody else was just as bogged down in the mire," says Chris Hogg, only half kidding.

Hogg, director of new Web/publishing technologies at Houghton Mifflin in Boston, says the frank and specific nature of the interaction and the case studies dissected by the class contributed equally to his own moments of breakthrough. "It was a chance to do some really good thinking about taking risks and reinventing your business without anyone saying, 'No, you can't do that,'" he says. "We were talking about delivering trash cans to Wal-Mart, and suddenly I was thinking, why can't [Houghton] print books to a Kinko's? It's the same principle, just a different business."

Those are exactly the kinds of connections that Houghton Mifflin's Mooney, Hogg's boss once removed, was hoping students would forge at the Babson program. "The exposure to other companies was really important for our people," he says. "We

tend to be really insular, and we've been trying to expose ourselves more to external ideas and influences."

To Mooney's way of thinking, a visionary IT leader has three qualities: technical know-how, financial expertise to manage projects and programs, and relationship skills. "We have a lot of people who are very proficient technologically, but they need development in the relationship piece, in understanding customer service," he says.

"Technology today is an integrated business process," says Lucent's Warfsman. "I have a lot of high-performing managers with strong tech skills, but they haven't had exposure to the business value proposition and customer concerns. They need help transitioning tech issues to business issues."

Warfsman says he would have welcomed an opportunity to learn leadership skills



When it comes  
to deploying  
a B2B internet  
auction solution,  
there's the pricey,  
six-month,  
never-ending  
consultant  
fest.

Or, there's  
Commerce One.

## COMMERCE ONE AUCTION SERVICES

Now, you could be running your own B2B Internet auctions in as little as 10 short days. With Commerce One you get a fully-hosted solution with no equipment to buy, and no systems to install or support. A secure online environment within your own auction site. And browser-based, point-and-click functionality that makes it all so easy, affordable, and comprehensive, that there's no need for the mandatory consulting service and ongoing support required with other solutions. When you need us, our professional services group and consultants are available to help. But only when you want it. On your terms and at the right price.

See for yourself with our online demo:

[www.commerceone.com/auctions/c2](http://www.commerceone.com/auctions/c2)

or call: 877.261.8516

COMMERCE  
ONE® 

MANY MARKETS. ONE SOURCE.™



when he was coming up through the ranks. "I picked those things up along the way, but I wish I had had a program [like Babson's] in the earlier part of my career."

### Full Course Commitment

**T**hat may be one reason Warfsmann made such an extraordinary effort to attend the program's kickoff dinner on a Sunday night last March. He flew up and back in the same night. "I was on a very tight schedule, and I know the other executives were struggling to take the time to be there," he recalls. "I wanted to send the message that I was committed. Everyone who spoke had the same message: Take advantage of this opportunity to learn, learn, learn. These chances don't come along very often in your career."

The CIO-level commitment to the program extends far beyond dinner. As part of Babson's consortium model for program development, technology officers from the five participating companies worked with

Guinan and Babson's Director of Public and Partner Programs Stephen Flavin for months to develop and fine-tune the curriculum before the first student was ever enrolled.

The consortium model that Babson first used to create its 20-year-old entrepreneur seminar brings participating companies in as partners in executive education development at the onset, rather than creating a program in a vacuum and hoping it fits corporations' needs. "In our custom work and in our consortiums, we have a very applied, practical approach and bringing in the CIOs is part of that development process," says Associate Dean Robert Russman Halperin, director of Babson's School of Executive Education.

"We don't take a program off the shelf and put some company's name on it. We sit with the clients—in this case, the CIOs—and develop a program that teaches new ways of thinking about the business," Halperin says. For the IT consortium, charter companies were apprised of other organizations expressing interest to help ensure

that direct competitors weren't enrolled simultaneously.

The advantages of such a business model are significant for Babson as well. The school knows that the program will be appealing because the participating companies helped develop it, seats are filled beforehand, and the school gets its capital before the first class. For the IT program, charter members (or "member companies") contributed at least \$25,000, which entitled them to send three students to the two-week program.

At least one impetus to create the IT Leadership Program came from Lucent Technologies, which had previously worked with Babson and Guinan to develop a customized, in-house training course for Lucent employees. Lucent's IT Leadership Development Program proved so successful, the company wanted to try a broader, consortium-type program for higher-level employees interested in exposure to other companies facing similar levels of change, according to Lucent's Director of Continuous Learning, Elaine Smith.

## Valley High: Thought Leadership 101

**From the center of Silicon Valley Santa Clara University (SCU)** has run a leadership program for senior IT professionals for three years now. That's a lifetime in technology terms. It's also a pretty good stretch by executive education standards.

Pete DeLisi, a veteran IT consultant who has run several seminars at SCU, heard repeatedly from executives at other seminars that leadership skills were a particular concern in IT. He gathered a few colleagues and conducted an informal survey of CEOs, asking what they felt their IT people needed. DeLisi and his group came back and hammered those requests into a curriculum tailored specifically for technology managers.

"There are a lot of places you can get those skills, but they tend to be generic. At the time, there really wasn't anybody offering a program specifically tailored to IT executives," says DeLisi, who is now academic dean of the Information Technology Leadership Program at SCU ([lsb.scu.edu/edc/ppitlp.htm](http://lsb.scu.edu/edc/ppitlp.htm)).

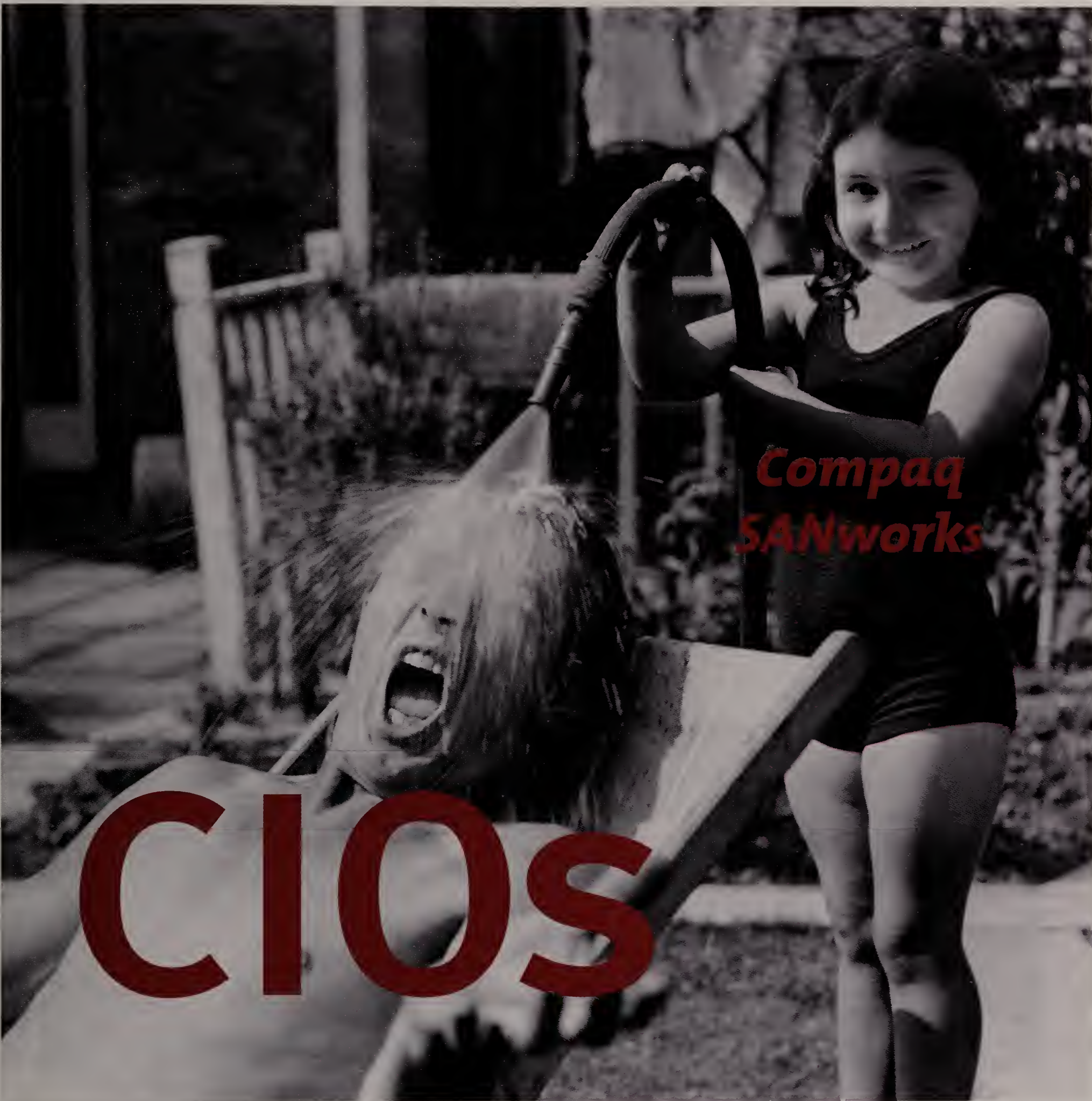
Though the goal is similar to Babson College's Entrepreneurial Leadership Development Program—to teach what DeLisi calls "soft skills" like relationship management, communications, marketing and

strategic thinking—SCU takes a different approach. The seminar is significantly shorter (three days instead of two weeks), class sizes are slightly larger (25 maximum at Santa Clara) and professors' classroom presentations are supplemented with input from guest CIOs.

"We're going for a broad exposure," says DeLisi. "You get the real-world practical wisdom from CIOs, theoretical management-based learning from the faculty and best practices and skill exercises from the perspective of an industry consultant." DeLisi himself, who is also president of Organizational Synergies, is the industry consultant to whom he refers. CIOs who have participated in the program thus far include Mark Barmann, former executive vice president and CIO at Charles Schwab (retired); Dave Laube, CIO at US West; Tom Thomas, CIO at 3Com; Patricia Anderson, executive vice president at Lockheed Martin; and Bill Raduchel, chief strategy officer at Sun Microsystems.

DeLisi was unaware of Babson's new program, but says he welcomes the news that other institutions are promoting the cause of IT leadership. "Our thinking when we started this program was that other schools in other parts of the country would catch on," he says. "There's a real need out there that we're trying to fill." —T. Mayor





**Compaq  
SANworks**

**CIOs**

**OPEN SAN SOFTWARE SOLUTIONS FROM COMPAQ.  
BET YOU WEREN'T EXPECTING THAT, HUH?**

Watch out! Here comes Compaq SANworks™. When the number one storage system provider and a leader in SAN solutions applies its open-computing expertise to create open storage solutions you have to sit up and take notice.

Ready for more? See [www.compaq.com/sanworks](http://www.compaq.com/sanworks)

**COMPAQ**



The participating companies have made significant financial and time commitments to this program. While students, professors and CIOs all agree that the entrepreneurial

overall experience that was specifically relevant to EMC. "If you look at the cases that they looked at, they're all very relevant. We were able to tailor this thing to get the great-

Lucent's Dave Kulpa voiced one concern present in the back of nearly every student's mind—however valuable the business challenge projects may be, that work must still

**"It was a chance to do some really good thinking about taking risks and reinventing your business without anyone saying, 'No, you can't do that.'"**  
—Chris Hogg, Houghton Mifflin

skills being discussed aren't often measurable, there is at least one concrete focal point for the students and a demonstrable measure of value for the CIOs. The students can bring the business challenge projects, developed with their coworkers, back to their companies for practical application.

"We found that people are much more engaged when they have to wrestle with their own work challenges, rather than just study-

est amount of interaction and discussion on current business problems."

### Back in Action, Gracefully

**T**hough Guinan and Anderson try their best to prevent reentry crashes by keeping the topic in play during the week and discussing transitions beforehand with head executives, there's no denying it's tough to

be wedged into days already crowded to the breaking point. "It's clear that we're all probably working more than full-time jobs, so trying to add this [project] is going to be a struggle," he says.

Projects aside, the students did find ways to start thinking differently right away. Hogg and the rest of the Houghton attendees did a

presentation for CTO Mooney and his 10 direct reports. Hogg says he has sent "10 different e-mails to 10 different divisions" asking people to consider new methods of content delivery. At a meeting in Orlando following her vacation, Higgins was able to incorporate some new perspectives gained during the first session into a talk she gave to a group of her direct reports.

Kulpa is taking a philosophical approach



ing someone else's case," Halperin says. "When the CIOs are involved, that gives students some political cover when they get back to the office and try to make it work."

"The class doesn't end when you leave Babson. They're tackling something that we're struggling with right now," says EMC's CIO Frank Hauck. He says the business challenge project is just one part of the

leave the thin air of entrepreneurial incubation and return home to a mountain of messages. With the exception of Lucent's Higgins, who scheduled a week of vacation following the seminar, attendees spoke of the huge volume of e-mail, voice mail and paper mail, as well as the daily crises of life near the top of the management food chain, that awaited them on their return.

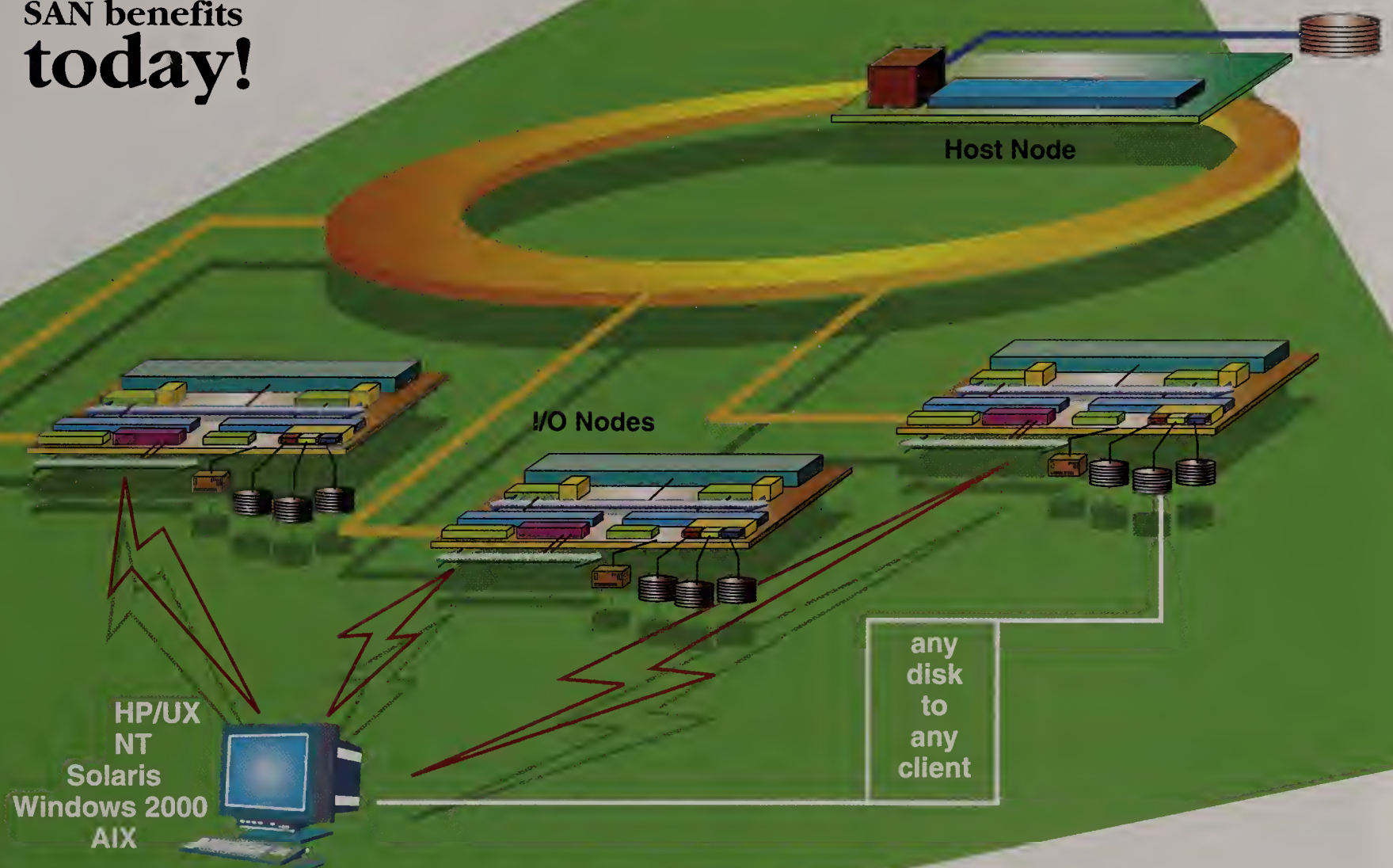
to applying his entrepreneurial skills during the working day. "If I think strategically for even a half hour a day, that's enough to make a difference." **CIO**

Have you recently ventured back into the classroom? Send your report cards to Features Editor Lafe Low at [lflow@cio.com](mailto:lflow@cio.com). Freelance writer Tracy Mayor can be reached at [tmayor@mediaone.net](mailto:tmayor@mediaone.net).



# don't wait for SAN!

network attached storage (NAS)  
delivers all  
SAN benefits  
**today!**



Auspex has written the book on storage architecture. It's called the **Storage Architecture Guide** and it takes the mystery out of when to use Direct Attached Storage (DAS), Network Attached Storage (NAS) and Storage Area Networks (SANs). In this informative report, you will learn why SAN doesn't live up to its vision yet because the Fibre Channel fabric just isn't there. In fact, it will probably take years for the Fibre Channel SAN standards to be finalized!

**State of the art** Network Attached Storage (NAS) servers like the Auspex NetServer 2000 can deliver all SAN benefits TODAY! This includes features like secure NFS and CIFS data sharing from a single data image that can save you big on total storage costs. The Auspex NS2000 also provides true *LAN free and server free* parallel backup which addresses the number one reported storage problem today - backup windows. These are just two of the many features that SAN vendors can only dream about in the year 2000!

A NAS server can simplify your IT operations dramatically while benefiting you with more rapid deployment of new systems, applications and storage. NAS can also increase your availability service levels dramatically. This will relieve your staff of the many hassles that arise from outages when critical data is scattered all over the enterprise on individual servers.

**Call Auspex at 1-800-735-3177** to receive an attractive printed and bound four color copy of the **Storage Architecture Guide**! Or, you can download the Guide in PDF format by visiting [www.auspex.com](http://www.auspex.com) or sending an email to [sales-inquiry@corp.auspex.com](mailto:sales-inquiry@corp.auspex.com).



**AUSPEX** Corporate Headquarters USA 2800 Scott Boulevard, Santa Clara, California 1- 800-735-3177 <http://www.auspex.com>  
Japan +81 3 3586 1751 • United Kingdom +44 1189407300 • Germany +39 89 350151-0 • France +33 1 42 04 9150 • Singapore +65 732 9770





Jeff Bezos

Takes

EVERYTHING



*Striking a “What, me worry?” pose in the e-tailer shakeout, Amazon.com founder Jeff Bezos and his executives remain focused on winning customers one at a time*

Just 5 years old, Amazon.com is the bellwether for dotcom retailers, and founder and CEO Jeff Bezos is the person to talk to when stock market players get the e-jitters over turbulence in the new economy. At the company's offices in a converted Seattle hospital, CIO contributing writer Malcolm Wheatley spoke with Bezos and two of his key vice presidents—Jeffrey A. Wilke, general manager of operations, and customer service head Bill Price.



BY MALCOLM WHEATLEY

# PERSONALLY

PHOTO LEFT BY MARK VAN S. PHOTOS RIGHT BY KEITH BROFSKY



# “OUR VISION IS THAT IF WE HAVE 20 MILLION CUSTOMERS, WE SHOULD HAVE 20 MILLION STORES.”

—JEFF BEZOS, CEO, AMAZON.COM

**CIO:** Customer service—or the “end-to-end, click-to-ship customer experience,” as you call it—is a vital part of Amazon.com’s competitive edge. But why did you choose that as a competitive differentiator and not, say, price or choice?

**Bezos:** We’ve studied this, and there are several things that are important to Amazon.com customers. People care about selection, people care about price, and people care about service. They also care about rich information—so that they can make a better purchase decision—and about ease of use. So we focus on all of those things.

But the end-to-end customer experience is more important than these and is even more important online than it is in the physical world. And the reason is that online the word-of-mouth impact is amplified. Every Internet customer has a big megaphone, and if we make a customer unhappy, they don’t tell five friends, they tell 5,000. And the reverse is true: You create evangelists. If you do a great job for customers, then they tell 5,000 friends in newsgroups and listservs and chat areas etcetera—so online, your marketing dollars are best spent building great customer experiences.

**Do you have any numbers or statistics to support that?**

**Bezos:** We believe, based on surveys that we have done, that more than half of our new customers come to us through word of mouth. And I can tell you that in our first year we did not do a dollar of paid advertising, and we still grew incredibly fast. Today, we do a significant amount of paid advertising, but it still accounts for less than half of our new customers.

Two years ago, we were only in the United States and only in books. We weren’t selling music or videos, or any of the other product categories we now sell, and we didn’t have Amazon.co.uk or Amazon.de. And two years later, although our U.S. book business has continued to grow rapidly, more than half of our revenues come from these new categories and businesses. And a lot of that has also been word of mouth.

**Won’t the importance of the Amazon.com brand diminish in the coming era of Internet-based comparison shopping, when people use “intelligent agents” to search the Net for the best price? How will you compete then?**

**Bezos:** Well, first, we’ll just have the best price. That’s the simple

approach. What people miss on the pricing front is that e-commerce is a scale business—meaning that your costs are largely fixed, and as your business grows, you are able to offer lower prices. So it should be possible for us to not only have the lowest prices but also the best service. And that is counterintuitive because in the physical world, which is a variable-cost business, you intuitively know that you can’t offer the best service and the lowest prices—there’s a trade-off. But that trade-off breaks down in the online world.

Secondly, we will be that shopping agent—that’s what we’re trying to do: to be that personalized shopping agent that not only finds you the best price but also the best product. This is a much more sophisticated thing to do than a situation where you already know what you want, and the shopping agent is simply trying to find the best price.

**This is where all the data you’re collecting on consumer buying habits and patterns fits in, right?**

**Bezos:** It’s hard to do it on the scale that we’re attempting—with millions of customers—but our vision is that if we have 20 million customers, then we should have 20 million stores: If you never buy romance novels, then we shouldn’t clutter your view with them. If you like literary fiction, then we should tilt your store toward literary fiction. The way to think about it is as a return to days of yore, when your small-town merchant knew you as a person and knew your tastes, and would say, “Look, I know you buy John Irving, and there’s this new author who you’re going to love.”

We [achieve this level of personalization] with technologies like collaborative filtering. What you do is look at all the things that an individual customer has purchased from us, and then look at all our other customers to identify those customers who have similar tastes and purchasing histories. Then, in a statistical way, we merge those customers into something that you can think of as being electronic soul mates. And then we look at the things that one electronic soul mate has purchased but that this [other] particular individual customer has not. And then we recommend those things.

**Any other examples?**

**Wilke:** One of the things that differentiates us from other retailers is the way we hold inventory as a network. It’s uneconomical



# Get it straight! Simplify, Control and Consolidate.



Consolidating computing can be very challenging. Having the best on your team simplifies that task. With our expert services and advanced server and storage technology, we'll make sure you touch all the bases.

Contact us today!

1-800-DATA GEN

 **Data General**  
A Division of EMC

[www.dg.com](http://www.dg.com)





“OUR OBJECTIVE IS TO PREDICT WHICH ITEMS PEOPLE BUY TOGETHER, WHICH IS ANOTHER WAY WE MINE THE DATA.”

—JEFFREY WILKE, GENERAL MANAGER OF OPERATIONS, AMAZON.COM

on sheer cost grounds to hold all the items we stock in each of our distribution centers, so our objective is to get better at predicting which items people buy together—which is another way we mine the data. At present, if we predict wrongly, we try [and pay to bring items] to the applicable distribution center to meet a particular shipment, but if we can't do this in the time frame that we promised the customer, then we'll split the shipment. And we'll pay for the split.

We probably have one of the richest mathematical opportunities available anywhere. That's why the professors are calling us—and want to work on it with us. Although our algorithms are getting

better fast, they are still in their infancy. And they are not something that we talk about. But we do have some pretty neat people working on them.

**You've sued Barnes & Noble for infringing on your “1-Click” patent on its website. It's clear from the “open letter” defending your position on the patent issue on the Amazon.com site that this is a sore point for many people. Don't you think this sort of behavior stifles innovation and is ultimately bad for consumers?**

**Bezos:** Certainly, that particular patent doesn't. But I do think that there's a problem with patents—both software patents





Forget it. You don't have 12 months.

Internet solutions for the business- to-business demand chain. Accelerate the sales process. Web-enable distribution channels. Activate net marketplaces. Streamline service and support. Build customer loyalty. Grow revenue.

**Online in 60-90 days. Configure, personalize: differentiate. Pay as you use. Use only what you need. Change on a dime. Innovate at web speed.** Visit [www.asera.com](http://www.asera.com) or call 1-877-992-7372 for more information.

**Asera**  
Accelerate your channels™

Download our latest reports at [www.asera.com/demand](http://www.asera.com/demand) to learn more about leading strategies in B2B e-commerce.



# “IF OUR STOCK HAS TO SUFFER SO THAT SOME COMPANIES CAN’T GET FUNDING, THAT’S PROBABLY GOOD FOR US.”

—JEFF BEZOS, CEO, AMAZON.COM

and business process patents—in that their lifetime is too long. If you’re building a physical process, then maybe 17 or 20 years is a reasonable patent lifetime. But if you’re doing a piece of software or creating a business process, then three to five years should be enough—but that’s not the way the patent system works.

## **Don’t you worry that this change would benefit larger companies at the expense of smaller ones?**

**Bezos:** I don’t think so. I don’t see that. I mean, it would also benefit small companies because they wouldn’t come up against having to license a 17-year patent. Big companies get most of the patents, and small companies run into them and have to license them. So I think if anything, [such a change] would probably disproportionately benefit smaller companies.

## **With the Nasdaq tech slide and the collapse of a number of so-called new-economy businesses, are you worried that your customers will worry about Amazon.com’s viability?**

**Bezos:** No, I don’t think customers are worried. I think there are two frames of mind regarding Amazon.com. Take the worst possible scenario: a day trader who is also a customer. And even in that extreme example, I think people have two very different spaces in their brain. One thinks about Amazon.com the stock, and the other thinks about Amazon.com the service. So no, I think our customers are happy to see us grow and take on new offerings and continue to develop our business.

Regarding the stock market’s reaction, I’m very happy to see the stock market start to discriminate with respect to these different kinds of new economy companies. If our stock has to suffer so that those companies whose business plans do not make sense are no longer able to get funding, then that’s probably a good thing for us in the long term.

## **In the meantime, of course, many of your employees are also suffering, thanks to stock options that are underwater. How does that feel?**

**Bezos:** When you use stock ownership as an important part of compensation, you’re doing something that on the face of it is nonsensical. You’re outsourcing to Wall Street this very important thing called your compensation strategy. And what com-

pany in its right mind would outsource its compensation strategy to a third party?

But the upside is that you are really making owners of everybody in the company. If you want people to behave like owners, you have to actually make them owners—there are no shortcuts to that process. And ownership obligates you to think long term—and if you think long term, then these daily, weekly or monthly periods of volatility in the stock market shouldn’t worry you very much.

## **Maintaining morale in customer service operations is notoriously difficult, anyway, without the tech slide. Won’t your focus on customer service be an enormous hostage to fortune if you don’t get it right?**

**Price:** Well almost every one of my senior managers began as a customer service rep. Even though it’s a young company, [these managers] came up through the ranks and they’ve been through the wars, and that has given them a valuable perspective. The holiday season, for example: It’s a hot time, and it’s important to know what to do and how to do it.

Hiring is critical, too: I know from past experience that many call centers hire people who are shocked when they find out they are expected to sit in front of a monitor with earphones on all day. And we don’t just move people up through the ranks, we also transfer a lot of people out into other areas [like] business development, marketing, IT and Web development—it’s an exciting career path, and many of our reps come in with that in mind. It’s only when we can’t do that or can’t meet those expectations or set the right tone about the challenges of the holiday season that morale problems creep in.

## **How do you manage the mix of phone calls versus e-mail that your customer service reps must handle?**

**Price:** Well we’re very different from a conventional call center operation because 70 percent of our contacts are e-mail. E-mail can be scheduled and queued and managed differently. It’s not the constant bombardment of phone calls coming in, or the sense of constant connectedness that you find in an outbound telemarketing call center. Most call centers are 95 percent phone, 5 percent something else. We’re very fortunate that we haven’t got that.

Some of our reps love being on the phone for six to eight hours a day, and they handle e-mail for the remaining part of their shift.

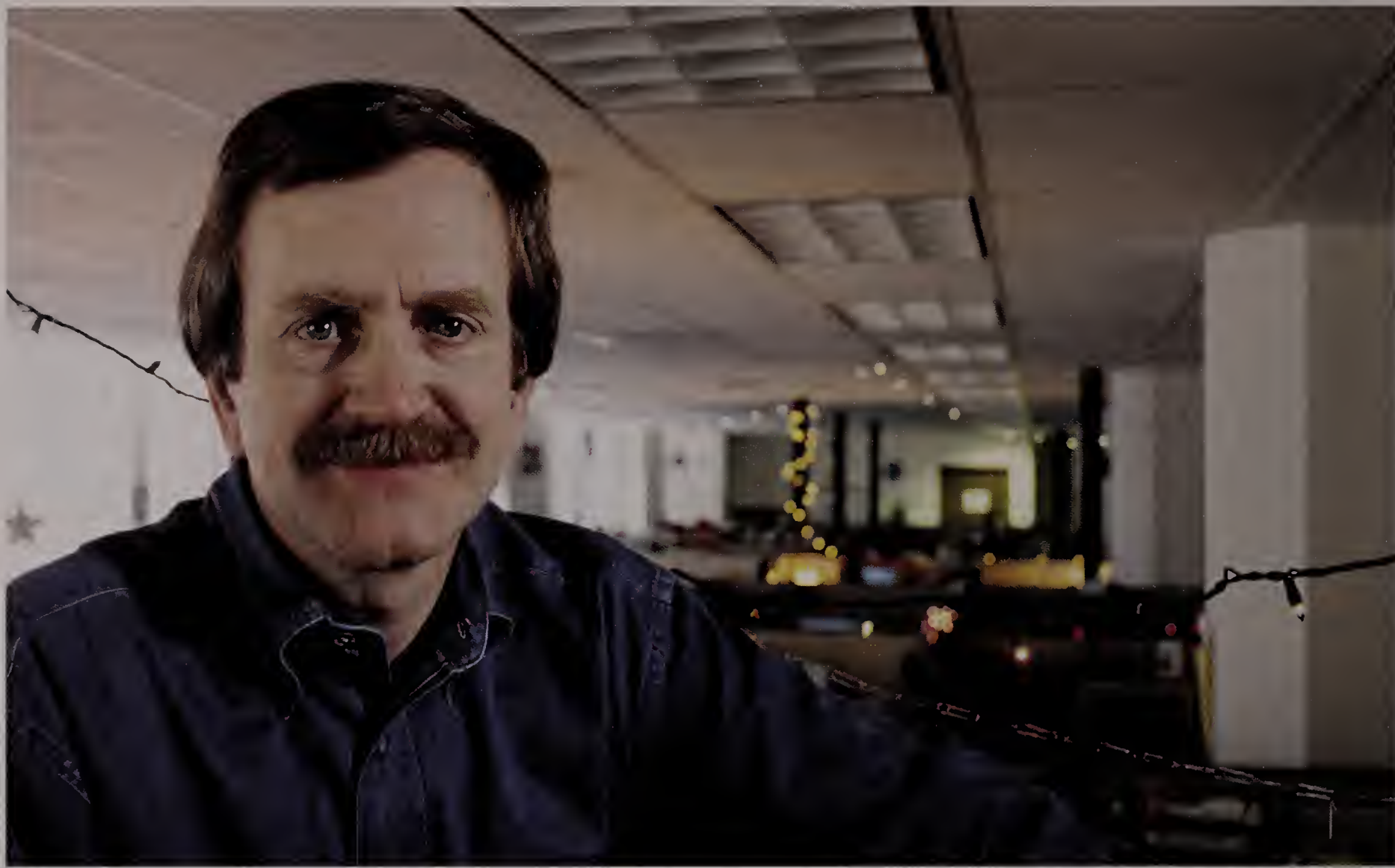


## Experience Speed-to-Market.

Time is money. So let's make this quick. Partnerware maximizes speed-to-market on a whole new level. How? By harnessing the power of the Internet, we help you deploy web-based **Partner Relationship Management** solutions in Internet time. That means in no time. Right now, we're helping channel-focused companies accelerate sales growth and drive results with real-time measurement. Plus, Partnerware offers the most flexibility to instantly respond to market changes and blow past the competition. Translation? Faster channel sales. Got your attention? Then make your move. **CATCH [WWW.PARTNERWARE.COM](http://WWW.PARTNERWARE.COM)**  
**OR CALL (888) 499-3000 x495.**







“ALMOST EVERY ONE OF MY SENIOR MANAGERS  
BEGAN AS A CUSTOMER SERVICE REP....  
THEY’VE BEEN THROUGH THE WARS.”

—BILL PRICE, HEAD OF CUSTOMER SERVICE, AMAZON.COM

Others are really good at e-mail and have excellent written communication skills and craft terrific answers, and we can arrange for them to spend most of their shift doing e-mail.

Although the original plan was for an eight-hour shift split equally between e-mail and phone calls, we’ve found that it makes sense to provide greater variety than that. Some reps do six to eight hours a day of just phone calls. Some do six to eight hours a day of just e-mail. Others do a blend. We schedule people for [shifts working on] phones or e-mail—but then, because all our people are cross-trained, we can redirect certain members of our teams during the day if we’re getting more phone calls than we anticipated, or if our e-mail queues are getting longer, and we want to bring them down. But as an employee, at any one time you’ll be handling a block of calls or handling a block of e-mail. It’s not like you’re getting a call, then an e-mail, then another call.

**With the benefit of hindsight, could you have handled the layoffs of 150 people in January any differently?**

**Bezos:** Yes, it could have been handled differently. But while it was happening—and especially while it was happening, but even afterward—you could look at it mathematically and say, we hired 5,000 people in the year and we laid off 150, which is just 2 percent of the company, which didn’t seem like very much. But in fact, it was very hard on all of us, and I don’t think that we understood how personally distressing it was going to be for all of us. So I think, yeah, there probably is a better way to handle that, even though that is traditionally how companies handle these things. But some of the costs of that are hidden. **CIO**

Would you bet on Amazon.com to triumph? Write us at [letters@cio.com](mailto:letters@cio.com). You can reach Malcolm Wheatley at [malcolm\\_wheatley@compuserve.com](mailto:malcolm_wheatley@compuserve.com).





Complex navigation is a guide on how to get lost.

[www.inxight.com](http://www.inxight.com)

**See. Know. Do.™**



# Emerging technology

INNOVATION and PRODUCTS in the VANGUARD

## Inside

new products  
..... 171

revisit  
*neural networks* .. 174

predictions  
*multitenant*  
*broadband* ..... 178

under  
development  
*distributed*  
*computing* ..... 180

*Edited by Christopher Lindquist. Send your thoughts and ideas for future columns to et@cio.com.*



## Automate the Paper Chase

*Online tools promise to boost expert workers' efficiency* BY JOHN EDWARDS

CRESTONE INTERNATIONAL had a problem. The Atlanta-based e-commerce consultancy couldn't find enough local designers, programmers and other IT professionals to meet its rapidly escalating workload. Experiencing triple-digit growth each year since its 1995 founding, the company needed to find a way to get extra

productivity out of its current employees—or face the disagreeable prospect of turning away work. “It wasn’t a matter of cutting expenses; it was a question of long-term viability,” says Cal Yonker, Crestone’s president.

Like a growing number of project-oriented organizations, Crestone decided to try its hand at

automation...neural networks...distributed computing...Web spending



using a professional services automation (PSA) tool. Although PSA was virtually unknown only a couple of years ago, software vendors now make PSA modules that can handle a variety of tasks: planning and scheduling, project management, sales-force automation, customer relationship management, performance management, communications, billing and more.

## Survival Tools

Ideally, PSA products bring to service organizations the same benefits that materials requirement planning and enterprise resource planning products give the manufacturing and distribution sectors, says R. David Hofferberth, research director, who analyzes the PSA field at Aberdeen Group, a Boston-based technology re-

## Rising Sales

As service organizations search for new ways to improve their efficiency, they're beginning to turn to PSA products as a means to that end. Worldwide revenues from PSA solutions came in at slightly over \$100 million in 1999, according to Aberdeen. And the researcher pegs the market's annual growth rate over the next five years at more than 85 percent, as more organizations embrace the technology and as new solutions and enhancements become available.

Although IT-related organizations were the earliest adopters of PSA products, the technology has begun to spread to many other types of service-oriented organizations, including engineering companies, law firms and advertising agencies.

**“Wherever there’s a need to better manage and deploy individuals, PSA solutions can help boost efficiency and, ultimately, profitability.”**

*—R. David Hofferberth, research director, Aberdeen Group*

search company. “A growing number of service organizations are utilizing PSA solutions as a survival tool in an increasingly competitive business market,” he says.

The increased customer interest has resulted in more developers going the PSA route. More than a dozen software vendors, including such major players as Icarian, PeopleSoft and SAP, as well as an array of newcomers including Augeo Software, ChangePoint Corp., Opus360 Corp. and PlanView, now offer PSA products. The vendors promise that their tools will boost the productivity of knowledge-oriented personnel, thereby allowing organizations—at least theoretically—to get more work out of fewer employees.

“Wherever there’s a need to better manage and deploy individuals, PSA solutions can help boost efficiency and, ultimately, profitability,” says Hofferberth.

PSA solutions come in two major flavors: Windows-based applications and Java-oriented thin-client tools. While Windows PSA products can be easily integrated with other Windows-based applications, servers and databases, Java-oriented PSA tools allow faster deployment and lower overhead, according to Aberdeen. As a result, Java PSA tools are rapidly gaining favor with a range of service organizations.

## Getting More from Less

At Crestone, once the decision was made to implement a PSA solution, everything quickly fell into place. The company

## new products

### Portals R Us

Enterprise software developer **Hummingbird** has announced the release of the **Hummingbird EIP Version 1.5** Web-based work space. EIP 1.5 provides tools that let companies build enterprise portals that include features such as single log-in, search, personalization, collaboration and security. Customers can also integrate a database or file repository and implement load balancing to help ensure acceptable performance levels. The product runs on Windows NT, HP-UX, Sun Solaris and Linux. Pricing starts at \$100,000. Developers looking to evaluate the product can download a developer's edition that supports a single user for free. For more information, visit [www.hummingbird.com](http://www.hummingbird.com) or call 416 496-2200.

### Printer Power

Who printed what, when and why? Answering those questions can save corporations a lot of money. To help, **Software Shelf International** has released **Print Manager Plus Version 2.7** for Windows 2000 and NT. Print Manager Plus lets administrators manage all the printers on a network from a central location. Companies can track who printed what documents, as well as set quotas on how many pages or what type of files employees can



looked at offerings from several PSA vendors but ultimately decided to use PeopleSoft's Professional Services Automation product because of its scalability and array of service-company-oriented capabilities. The four-month implementation went smoothly, although Yonker says the company lost several days from its original schedule when it jumped the gun and re-assigned several IT team members to other tasks before the project was completed. "We rushed," he says.

Crestone uses PSA technology to support its 200-plus consultants based in cities worldwide. Prior to the software's implementation, Crestone's consultants had to fax or snail-mail their time and expense forms to headquarters for process-

## Order from Chaos

While many organizations use PSA products for an array of tasks, some turn to the technology to streamline a specific business process. Sprint Corp.'s Enterprise Network Services (ENS) unit, for example, is using the Web-oriented PlanView solution to automate its billing and invoicing. The PSA software features a thin-client interface that's accessed through a Web portal, coupled with software engines, gateways and a standard SQL database that contains work and resource data.

Sprint ENS signed up for PlanView in January 1999 and implemented it nine months later—though it was supposed to happen more quickly. "It was a rough time," recalls Paul D. Cali, director of

## A problem with PSA solutions is their broad, overly comprehensive scope.

ing and approval. Now employees use a Web portal and a Java client to enter the data into a pop-up window that connects directly into the PSA software. The product automatically processes the information and forwards it to company managers via the Web for final authorization. The software also helps Crestone track report earnings and revenue by state, an important factor for a company with a geographically dispersed workforce. Yonker estimates that the time-and-expense reporting system alone saves Crestone approximately \$19,000 per year.

Yet there's always room for improvement. Most important, Yonker would like to replace the system's current in-house-designed user interface with something more intuitive. "What we have now is pretty clunky," he says. But Yonker views the interface flaw as a minor annoyance, since he estimates that the total PSA solution will save the company nearly \$50,000 per year. "We can grow to an unlimited number of consultants without any danger of overburdening our systems," he says.

information systems for the Houston-based organization, which provides enterprise network support and related services. Cali says the slow rollout was the result of an unforeseen organizational restructuring that struck the project in mid-stream. The sudden shift in employees' roles and responsibilities required Cali to make a variety of configuration and training changes. "We basically lost about four-and-a-half months' worth of effort," he says, although much of that time was recovered by pushing the project into overdrive during its final weeks. As a result, the rollout missed its planned deadline by only one month.

Outside of a balky reporting module, which runs slower than he would like, Cali is generally happy with the PlanView technology. But he remains somewhat discontented, noting that a problem with PSA solutions in general is their broad—perhaps overly comprehensive—scope. According to Cali, PSA vendors offer so many functions that customers tend to buy more technology than they really

## new products

print. The product supports individual users as well as groups, and administrators can use any ODBC-compliant reporting tool to view detailed information about printer usage. Print Manager Plus is available for \$495 for a single print server license. For more information, visit [www.softwareshef.com](http://www.softwareshef.com) or call 727 445-1920.

### Instant WAN

Setting up a secure connection between two offices isn't always easy or quick. But **OpenReach.com** hopes to change all that with a new product that lets companies connect their remote networks with a few mouse clicks. Users simply download and install the **OpenReach software**, which automatically configures any PC into a network appliance capable of securely communicating with other OpenReach-enabled computers. They then simply point and click on a map of their other offices to connect over any Internet connection (modem, T1 or DSL) and through any Internet service provider. Pricing starts at \$99 per month, per location. For more information, visit [www.openreach.com](http://www.openreach.com) or call 781 246-2410.





*Our Business-to-Business Web site just got so user-friendly, you'll even get a "gesundheit" when you sneeze.*

Whether you're ordering custom-embroidered apparel for 6 or 6,000, you'll be amazed at how efficient our Corporate Sales Web site can be. It's easy to navigate, but should you have a question while you're on-line, you can get one of our Corporate Sales consultants on the phone, looking at the same screen you are, to talk you through the details. We call it Lands' End Live. You'll call it the nicest way to do business on-line. Call now for our Corporate Sales catalog and find out why 90% of the companies on the Fortune® 500 list trust Lands' End with their valued names.

1-800-916-2255 or [landsend.com](http://landsend.com).

Corporate Sales



*Life is in the details.™*



require. "In fact, one usually needs only 15 [percent] to 20 percent of a product," says Cali. Besides inflating costs, the superfluous functions can lead to training headaches as employees struggle to learn features they may never use. Cali says that if he could start over, he would focus on the processes that would directly benefit from automation, such as accounting and resource management functions, and forget about everything else.

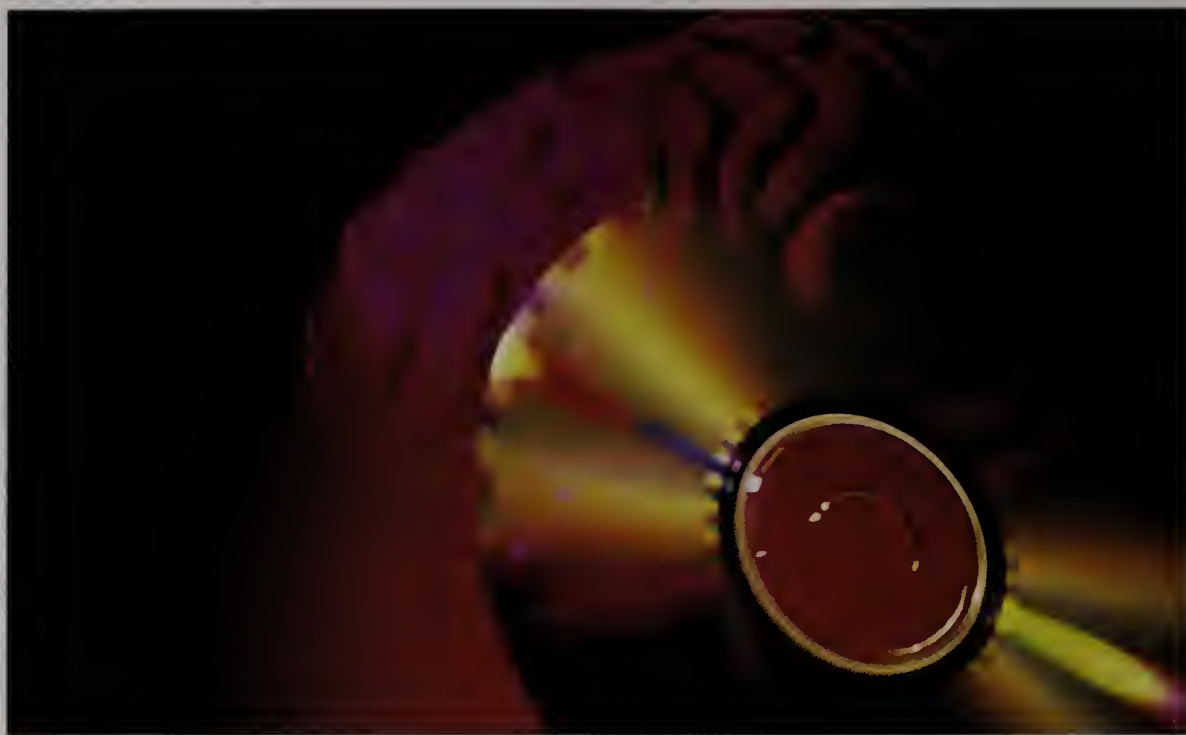
## Rewarding ROI

Feature overkill aside, there's a simple reason why service organizations are rushing to PSA solutions: The products usually offer a positive return on investment. "For most customers, PSA solutions pay for themselves within a year," says Aberdeen's Hofferberth.

Yet finding a suitable PSA product requires some effort. Mark Richardson, vice president at consulting company Cap Gemini Ernst & Young, says CIOs need to look for PSA solutions with modules that are integrated and scalable, since these are the key attributes required by any rapidly growing service business. The New York City-based company has used PSA technology since 1992 to automate its payroll, benefits and human resources functions. Richardson says that as more startups enter the field, prospective buyers also need to investigate a vendor's long-term viability. "A PSA solution that will only be around for a few years isn't going to be of much help," he says.

Sprint ENS's Cali urges CIOs to keep an open mind when considering PSA tools. "Customers usually want a solution that fits into their processes, but sometimes it's better to revamp your processes to fit a tool," he says. "After all, the goal is not to keep things the same way, it's to become more efficient." **CIO**

Are you an efficiency expert? Tell us about it at [et@cio.com](mailto:et@cio.com). John Edwards is a freelance technology writer based in Gilbert, Ariz. He can be reached at [jedwards@john-edwards.com](mailto:jedwards@john-edwards.com).



## REVISIT neural networks

# If It Only Had a Brain

*Neural net marketers should have thought more before selling their smart software* **BY FRED HAPGOOD**

**NOVEL TECHNOLOGIES** must have metaphors to make the market take notice. Cars were once sold as "horseless carriages," zeppelins as "ocean liners in the air" and computers as the next step in adding machines. But all metaphors are potential time bombs: A good technology sold using a metaphor that has the buyer expecting an even better technology will suffer.

Such was the case with neural networks. In simplest terms, neural networks are programs that arrange complicated objects into groups. They might be used to sort pictures of dogs into individual breeds, credit applications into good and bad risks or customer profiles into the class of products the customers are most likely to buy.

All the user had to do (or so the story went) was expose the network to a series of training examples, measure the error between the desired goal and the actual output, and enter these measurements back into the program. As these measurements propagated through the net, its process-

ing behavior would use them as corrections and alter automatically toward the desired goal.

When the companies selling these products sat down to create a marketing metaphor, they didn't have to think for long. The original idea behind neural nets came not out of computer science or decision theory but from neuroscience, which had shaped a theory of how neurons cooperate to classify sensory inputs and thoughts into categories and make generalizations about the world. The metaphor followed naturally: Neural nets worked because they were like little brains.

A January 1992 *CIO* article on the technology was dominated by the analogy. "A serial computer, like the brain's left hemisphere, is ideal for managing your bank account," we explained, "[while a] right-brained artificial neural network could discern your spending habits by looking at the past year's checks." This was a dramatic claim, but we didn't shrink



**funny, but a partial  
e-business solution tends  
to solve only  
part of the problem.**

With so many options to make your business an e-business, the trick is separating the real solutions from the incomplete. To that end, if you're not looking at the big picture, it's inevitable that what you choose will come up short. With mySAP.com™, you can count on getting a fully integrated, comprehensive e-business solution, from B2B procurement and supply chain management to customer relationship management. We've helped more than 22,000 businesses in 21 industries to be successful. And we can help yours, too, no matter what size your company is. Want to know more about how our seamless, fully integrated, real-time solution can turn your business into an e-business? Visit us at [www.mysap.com](http://www.mysap.com) and you'll see.

**you can. it does.™**



from the implications. We even suggested that the long-term social effects of neural nets might compare favorably to those of the internal combustion engine.

Eight years is not long term, of course, but the history of neural nets over the past decade suggests that their impact will be more modest. "I recall seeing a survey in 1995 that claimed that of the hundreds of companies that had tried to sell neural nets, the average life span was six months," says

tory. If the designers make the right decisions, then the kangaroo will find a solution in a reasonable amount of time. If they make the wrong choices, the poor beast will hop around forever, sometimes even sailing right over the solution without ever landing on it.

During the past decade, as experience with neural net technology has grown, a new—and more reasonable—metaphor has emerged: neural nets as self-executing

**"I recall seeing a survey in 1995 that claimed of the hundreds of companies that had tried to sell neural nets, the average life span was six months."**

*—Warren Sarle, R&D manager, SAS Institute*

neural net guru Warren Sarle, now a manager of research and development at software vendor SAS Institute, of Cary, N.C. In practice, neural nets turned out to be quite tricky to manage and often learned too slowly to be practical in a business context, sometimes requiring hundreds of thousands of training sessions to arrive at a useful level of performance.

Some users blamed the technology for these disappointments, but it is also true that while the brain metaphor might have stimulated sales, it also raised expectations to very high levels. Sarle recently published an essay explaining neural nets in a very different way. In his view, a given problem is a landscape; the solution is the highest point in the landscape; and the neural net is a blind kangaroo holding an altimeter, hopping around trying to find this point.

It sounds labored, but the metaphor explains why neural networks are so tricky to configure. To make them work effectively, somebody must figure out how far and in what direction the kangaroo should hop, how much history it needs to retain of its previous efforts and what sorts of analysis it needs to do on that his-

statistical functions or formulas, no more sexy or dramatic than chi-squared distributions or rank-correlation coefficients or any other statistical technique. The market has reacted by dropping products that placed the responsibility of setting up the initial conditions—programming the kangaroo—on the user to emphasizing products optimized by the vendor for specific applications (in SAS's case, data mining). These products often come bundled with many other classification or generalization systems as part of a sorting toolbox.

While this new perspective has lowered the technology's drama, the tighter focus has delivered results. Current neural net applications are as wide-ranging as detecting fraudulent credit and corporate card transactions (Nestor Inc. in Providence, R.I.), finding patterns in Web-surfing (Pingpong.com Inc. of Fountain Valley, Calif.) and navigating minivans across the country (two Carnegie Mellon University researchers accomplished the feat in 1995).

The lesson here is a bitter one for both marketers and journalists: A sexy marketing metaphor can kill a product almost as easily as it can sell it. ■

## new products

### Right on Time

Time isn't always on your side. Misset PC clocks can incorrectly stamp e-mail and other documents, throw off time-and-billing tools and otherwise confuse other time-sensitive applications.

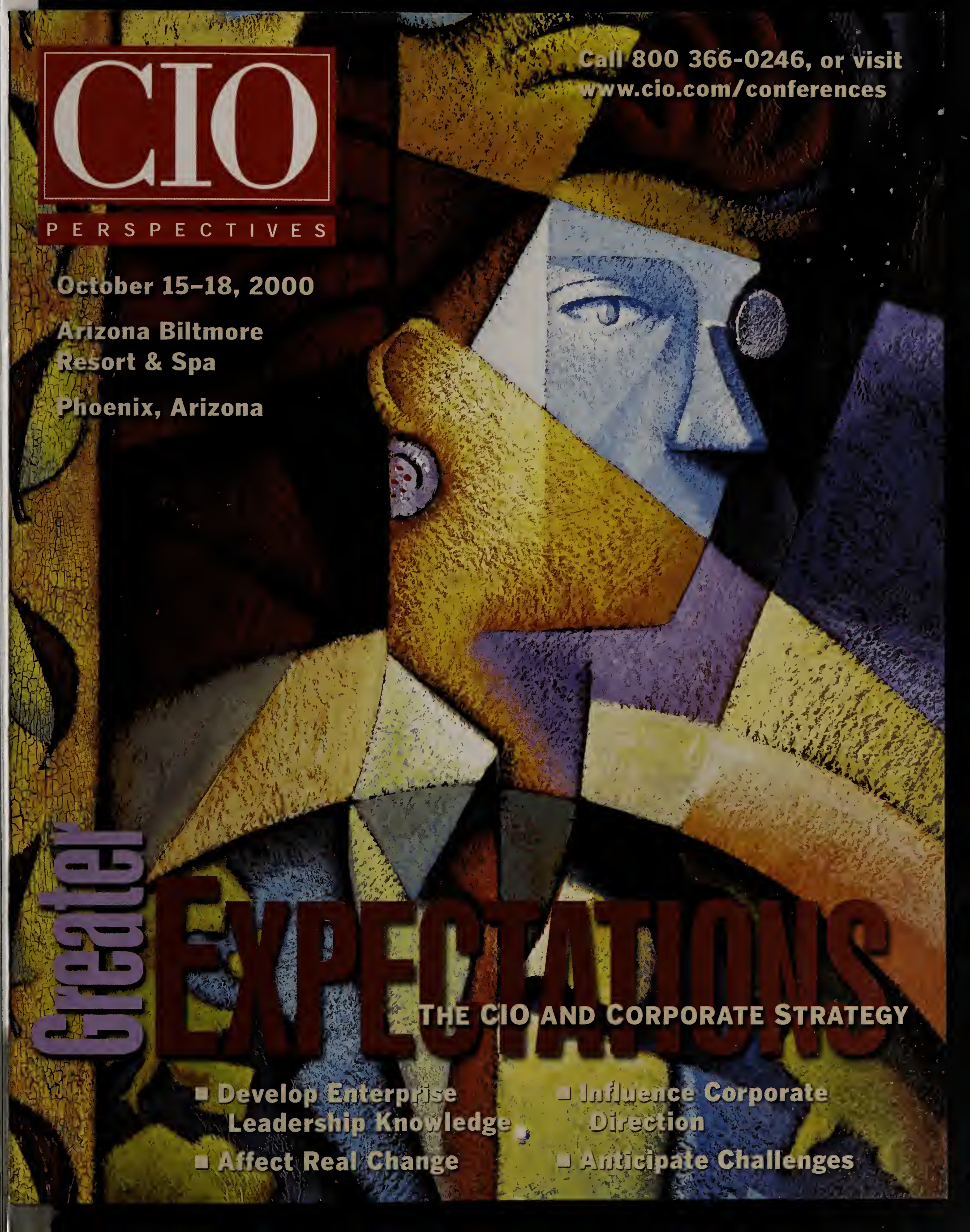
**Domain Time II Version 2.2** from **Greyware Automation Products**

lets administrators automatically configure and update client clocks. The Domain Time II client can automatically locate network time servers and then configure the local PC's clock, keeping every PC on a network in near-perfect synchronization without user or administrator intervention. The Domain Time II Server runs on Windows 2000 and NT and costs \$125. Clients start at \$7.50 each and are available for Windows 2000, NT, 95, 98 and 3.x, as well as Linux, Unix, NetWare and MacOS. For more information, visit [www.greyware.com](http://www.greyware.com) or call 972 867-2794.

### Drive Time

Looking to update your backup drives? **Tecmar** recently unveiled its **WangDAT 9400** model, a Digital Data Storage 4 (DDS-4) format tape drive that supports 20GB of storage on a digital audio tape (DAT) cartridge combined with a data rate of 2.75MB per second. The drive can also read older





# CIO

P E R S P E C T I V E S

**October 15-18, 2000**

**Arizona Biltmore  
Resort & Spa**

**Phoenix, Arizona**

Call 800 366-0246, or visit  
[www.cio.com/conferences](http://www.cio.com/conferences)

**Greater**

# EXPECTATIONS

**THE CIO AND CORPORATE STRATEGY**

- Develop Enterprise Leadership Knowledge
- Influence Corporate Direction
- Affect Real Change
- Anticipate Challenges





## TABLE OF CONTENTS

### CONFERENCE

OVERVIEW ..... 2

THE CIO AND CORPORATE  
STRATEGY: IT'S ALL  
ABOUT GREATER EXPECTATIONS ..... 3

AGENDA ..... 7

BUSINESS  
BRIEFINGS ..... 10

VENTURE  
ONSTAGE ..... 13

CORPORATE  
HOSTS ..... 14

ARIZONA BILTMORE  
RESORT & SPA ..... 19

ENROLLMENT  
FORM ..... 20

CANCELLATION  
POLICY ..... 20

COVER ILLUSTRATION: TIM LEE

# overview

**Greater Expectations: it's all about more.** More responsibility for business strategy. More complexity in a 24x7 global e-commerce market. More technology coming at you. More scrutiny from the executive management team. More risks. Hopefully, more rewards.

How these new expectations will impact you, what they mean for your organization, and what they portend for the future of both are at the heart of the next *CIO Perspectives®* conference, **Greater Expectations: The CIO and Corporate Strategy**, October 15-18, 2000 at the Arizona Biltmore Resort & Spa in Phoenix.

We'll explore why it's crucial for the CIO to be a leading force in shaping and driving corporate business strategy, as you join with noted authors, experts, and your peers to dissect key aspects of this additional role for the CIO.

Fellow CIOs Sandy Goldstein of Airgas, Inc. and David Aldridge of Home Shopping Network share their approaches to understanding the depth and breadth of the changes in the business environment today, and how that is reflected in their strategies. Yale School of Management's Jeffrey Garten stresses the importance of rethinking everything when you go global. Michael Earl, acclaimed business author and professor of information management at London Business School, presents the results of new research he'll be conducting this summer on what it takes to be — and what is expected of — a CIO. Avon's CIO Harriet Edelman talks about translating high-level strategies into actionable plans for aligning IT to business needs. And Richard Barrett, author of *Liberating the Corporate Soul: Building a Visionary Organization*, explains what cultural capital is and why it should matter to your overall business strategy.

You won't want to miss our new **Venture OnStage** session, where five CEOs present what they each hope will be the next technology blockbuster.

You'll also be able to meet with executives of our Corporate Host companies during their business briefing presentations, and in a more informal atmosphere during breaks in the display area.

To enroll, fax the enrollment form (on the back cover) to 508-879-7720, call us at 800 366-0246, or enroll via the Web at [www.cio.com/conferences](http://www.cio.com/conferences). The Web site also contains news and information on the agenda, companion program, Venture OnStage, travel and hotel information.

We think this program will be especially provocative, and we look forward to seeing you in Phoenix!

Lynda Rosenthal  
Executive Vice President and  
General Manager, Executive Programs  
CXO Media, Inc.

Gary Beach  
Group Publisher  
CXO Media, Inc.



welcome

# Greater It's all about EXPECTATIONS

## THE CIO AND CORPORATE STRATEGY

**GLOBALIZATION OF THE ECONOMY**, increasingly complex technology demands, the need to formulate and drive corporate strategy, the Internet and e-commerce — these are just some of the forces pressing on today's CIO.

Clearly the very concept of what it means to be a CIO is undergoing a radical transformation. Now, more than ever, the CIO is being asked — no, required — to master many domains. From inveterate leader of a group of highly-skilled professionals tasked with constantly adapting the enterprise's infrastructure, to business visionary capable of recognizing the changing needs and seizing bottom-line opportunities — this is not your old-style CIO.

In our much-ballyhooed new economy, CIOs will figure in every tactical and strategic direction the corporation undertakes. The demands are as daunting as the potential rewards are unlimited. What's it all about?

It's about **Greater Expectations: The CIO and Corporate Strategy**, of course — the theme of the October 15-18, 2000 *CIO Perspectives* conference at The Arizona Biltmore Resort & Spa in Phoenix.

To get a more meaningful view of the 'greater expectations' now facing

CIOs, we turned to several well-known and respected authorities for their insights and advice. What we discovered confirms that the current dialogue regarding the transformation of CIOs — and the importance of their involvement in corporate strategy — is not just hype. Indeed, Michael Earl, Professor of Information Management and Director, Center for Information Management at the London Business School, has extensive research data documenting the emergence of a model CIO for the New Economy.

### TAKE THE LEAD ... OR GET LEFT BEHIND

Using data and examples gathered in the summer of 2000 from the USA and Europe, Earl documents how significant organizational and strategic market forces are

affecting IT practices and reshaping the role of the CIO.

"My research shows that CIOs are being asked to substantially increase their participation in shaping the strategic direction of the company, to accept more responsibility for initiating business change projects, and to become more aggressive in introducing new technology into the organization," he reports.

Based on his research, Earl has created a "model" CIO for the future that other CIOs can use to position themselves. "I have data clearly demonstrating the evolving role of the CIO, from the last five years to what I believe the CIO will look like five years from today," he says. "I hope CIOs will be able to assess their own experiences and capabilities against the model CIO suggested by my research, and construct a personal development plan to equip them to become new-economy CIOs."

Among the skills this new breed of CIO will need to meet the challenges posed by a global, Internet-based economy, he says, are "technical com-



# WELCOME

## It's all about Greater Expectations

petence, business acumen, and the ability to lead people."

Technical competence, Earl notes, comes from years of experience within the IT function. The key to acquiring the more non-traditional knowledge they'll need is for "CIOs to spend more time outside the IT department and outside the organization."

### MEASURE THE INTANGIBLES, AND HARNESS THEM

No CIO seeking career success and corporate profitability can ever underestimate the importance of keeping customers happy. But keeping customers happy, believes Richard Barrett, author, consultant and founder of Corptools.com, depends on attracting and retaining the best people. For Barrett, finding effective techniques that release new levels of employee creativity and productivity is one of the biggest issues facing executives today. And the way to address these issues, he says, is by building cultural capital.

But what is cultural capital? "It's the intangible assets of a corporation," says Barrett. "These are usually not reported on the balance sheet. Cultural capital includes employee creativity, productivity, knowledge or intellectual capital, experience, and emotional intelligence as well as customer relationships and the goodwill of society. Companies with high cultural capital focus their energies on employee fulfillment, customer satisfaction, and social responsibility. Their leaders are vision-guided and values-driven.

They inspire and motivate people. Companies with a high degree of cultural capital are usually more successful over longer periods of time than companies that are low on cultural capital."

Barrett views the role CIOs should play in measuring and managing cultural capital as twofold. "First, CIOs need to show the leadership team how metrics can be used to measure cultural capital and, secondly, CIOs must provide regular updates on what is happening to cultural capital in the organization," he says.

Barrett sees cultural capital as "the new frontier of competitive advantage. If you want to attract and retain the best people," he says, "then you need a great corporate culture that provides physical, emotional, mental, and spiritual fulfillment to everyone in the organization. By spiritual, I mean a sense of meaning, making a difference, and service."

CIOs need to "get an appreciation for the possibility of measuring the intangibles — particularly cultural capital. The intangibles represent such an important part of what makes a company successful," he stresses.

### SOURCE BRAINPOWER WHEREVER YOU FIND IT

Jeffrey E. Garten, Dean of the Yale School of Management, also sees a human equation at the foundation of corporate strategy.

Based upon his recent book, *World View: Global Strategies for the New*

*Economy*, and interviews conducted with 40 of the world's top CEOs for his forthcoming book, *The Mind of the CEO* (January 2001), Garten says that the "biggest challenge will be to maximize the advantages of global reach." And to do that, companies must develop a dramatic new business model.

"In the early 21st century this will mean sourcing brain power rather than low-cost manufacturing sites," he explains. "As Jack Welch says, 'you have to get every mind in the game.' The winning global companies will find talent where others cannot — in rural China, in northeast Brazil, in small towns in Eastern Europe. This is a new game for most corporations — whether they are American, European, or Japanese — because most have relied on their own intellectual pool to fuel growth and profits. That won't work in the global economy anymore."

### UNDERSTAND THE NEW ECONOMY CUSTOMER

Communicating with and anticipating the needs and demands of an increasingly complex workplace — as well as increasingly sophisticated on- and off-line customers — must be the focus of a CIO's attention, according to Sandy Goldstein, Senior Vice President and CIO of Airgas, Inc.

Goldstein further believes that very few organizations will be insulated from the change e-commerce demands. "E-commerce is altering the relationships between customers and vendors," he says. "Understanding



your customer needs and being able to respond on a 24x7 basis is now a business imperative. Competitive pricing and quality products and services are only the sub-plot," he says.

Not surprisingly, Goldstein also sees a larger role for CIOs. "CIO skills need to expand to meet these growing demands," he says. "In the past, keeping technology running and meeting internal customers' needs were paramount. Today external customers and solutions to run the business are key."

But how can an organization (and its CIO) decide about aligning IT with the business, versus aligning IT with customer needs, versus IT driving business strategies for the new on-line economy?

"It's not about deciding," Goldstein asserts. "Your customers have already decided. The new CIO must align IT with the business, meet customers' needs, and create new strategies for working in the online economy. The only decisions are under what governance this function should operate and how fast you can get there."

And what can CIOs do to communicate within their organizations so that IT can understand and address customer needs and demands?

"Many novel approaches exist," he points out. "My business, for example, has successfully utilized distributed work teams, where IT lives with

the customer. We also employ customer-driven management and, in all cases, cooperative project teams. We take advantage of tools such as voice and video conferencing, intranets, extranets, chat rooms, bulletin

**"My research shows that CIOs are being asked to substantially increase their participation in shaping the strategic direction of the company, to accept more responsibility for initiating business change projects, and to become more aggressive in introducing new technology into the organization."**

**Michael Earl, London Business School**



boards, mobile offices, flex time, and the like. In addition, Airgas has a program called 'externships' where we send all IT professionals to customers' locations from one to four weeks a year to learn more about our customers' businesses."

Goldstein also offers a number of novel ways for CIOs to communicate with customers to make sure the organization is keeping them happy. "We use a feedback process and surveys, as well as letting our customers complete project performance reviews for our associates," he says. "Financial incentives are tied to the reviews," he adds.

## **INTEGRATE OLD AND NEW CULTURES**

Moreover, as an organization's e-commerce capabilities evolve, adds David Aldridge, Executive Vice President and CIO of the Home Shopping Network (HSN), CIOs can expect to deal with several important cultural and business changes. "The integration of e-commerce — both technical staff and their initiatives — with legacy staff activities has definitely impacted our internal culture," says Aldridge.

The major technical challenges of e-commerce implementations are the integration of the front-end e-commerce engine with the back-end legacy systems that support core business, he believes.

But, he notes, "there are significant staffing issues that CIOs need to address as their organizations adapt to New Economy opportunities, including the need for hiring, retaining and/or retraining staff with the appropriate skills to deliver e-commerce solutions quickly. And with the current staffing shortage approaching one million professionals, there are challenges for us all."

What advice does Aldridge offer CIOs as they guide their organizations into e-commerce competition?

"You must create a separate IT group



# welcome

## It's all about Greater Expectations

to focus on the demands of e-commerce," he says. "But don't underestimate the complexity of integrating an e-commerce front-end with legacy systems. Getting there with something reliable and scalable is more important than getting there quickly. Of course, you still have to get there quickly!"

Yet as important as e-commerce is, Aldridge offers a warning: "While the present focus is on e-commerce, which presents a new opportunity to link with customers and suppliers, many companies will continue to drive earnings from legacy applications."

Yale's Garten also cautions about current conventional wisdom concerning Internet competition and the new economy. His views are shaped by his experiences as Undersecretary of Commerce helping US firms break into foreign markets, as well as time spent managing Lehman Brothers' Asia operation.

"The most listened-to consultants and academics have been saying traditional global companies will be taken to the cleaners by the new Internet firms," he says. "Guess what? They are wrong. The empire is striking back. Most global CEOs, while slow to start, are embracing the Internet with tremendous force. Yes, it's a tough change, particularly culturally, but it will happen. The empire will — indeed, it already is — striking back."

### FOSTER REALISTIC EXPECTATIONS

CIOs must learn to communicate effectively to the wider corporate community. Dr. Jim Wetherbe, Stevenson Professor of IT, Texas Tech University, warns that unless CIOs do this, IT will

"The winning global companies will find talent where others cannot - in rural China, in northeast Brazil, in small towns in Eastern Europe. In the early 21st century this will mean sourcing brain power rather than low-cost manufacturing sites."

Jeffrey E. Garten, Dean, Yale School of Management



lose control over user expectations. As a veteran of the IT trenches himself, Wetherbe has first-hand experience of customers' disappointments when differences exist between what's received and what was anticipated.

"Employees and executives have unrealistic expectations of their information systems and tools, such as what they're going to get, when they're going to get it, and how much it's going to cost," says Wetherbe.

Such unrealistic expectations develop in a variety of ways, including

wishful thinking, miscommunication, creeping expectations, and a curious phenomenon he calls 'the void.'

For example, IT delivers an accounting application designed to improve cash flow. The applications meet all of the agreed-on specifications, but suddenly your user asks, 'So, when do we cut staff?' Where did that expectation come from? Well, in this case the user believed it was the purpose of all IT systems to reduce headcount — this was never agreed to by IT, but it was assumed to be part of the process by the user."

"There are very practical, straightforward, streetwise ways that every CIO should know to minimize this vexing problem," he says. "Part of the reason users have unreasonable expectations is because they don't really understand how difficult IT tasks are," he notes. "CIOs need to learn how to be proactive in communicating; they need to tell their story to the rest of the organization. Many IT professionals confuse hard work with recognition — it's not the same thing."

There's little confusion about where the CIO's role is heading, and the need for today's practitioners to influence corporate strategy with a blend of technical knowledge, business acumen, and leadership ability. It is, after all, about greater expectations.



## SUNDAY, OCTOBER 15

11:30 am - 3:30 pm **The Leaderboard Classic Golf Tournament**  
Hosted by Lockheed Martin Corporation

3:30 pm - 5:30 pm **Conference Registration**

6:30 pm - 8 pm **Welcome Reception and Registration**

8 pm - midnight **Hospitalities/Networking**

## MONDAY, OCTOBER 16

7:30 am - 8:30 am **Breakfast**

8:30 am - 8:45 am **Welcome, Opening Remarks and KnowPulse<sup>SM</sup> Poll**



**Gary Beach**  
Group Publisher  
CXO Media, Inc.

The KnowPulse "Knowledge" poll, an ongoing opinion poll conducted by CIO magazine, captures IT and business executives' perspectives on current topics in the news. Past polls have been covered in CIO magazine, as well as other prestigious media organizations, including CNN, Newsweek, The Wall Street Journal, and U.S. News & World Report.

8:45 am - 9:30 am **Managing the Expectation Gap**



**Dr. Jim Wetherbe**  
Stevenson Professor of IT, Director of IB2 Research  
Texas Tech University

### Conference Moderator

People become disappointed when differences exist between what they receive and what they expect. As a professional group within an organization, IS teams in general work longer days and harder per hour, and give up more weekends than any other group. Yet, despite their commitment, they often do not receive the recognition they deserve for their personal sacrifices. The problem is that what is delivered often does not meet expectations. Such gaps usually surface when organizations dynamically change their expectations of IT without the CIO's knowledge or input, or when users acquire unrealistic expectations about its benefits. Wetherbe explores the phenomena of expectation gaps, and suggests approaches CIOs can use to effectively manage them.

9:30 am - 10:30 am **The Train Needs To Fly: Technology Alignment in a Rapidly Evolving Business Environment**



**David Aldridge**  
Executive Vice President and CIO  
The Home Shopping Network

The Home Shopping Network (HSN) pioneered the electronic retailing industry in 1977. From a rather simple business model, HSN has evolved into an electronic retailing powerhouse with live programming 24 hours a day, 364 days each year, reaching more than 70 million US households through broadcast, cable, satellite and the Internet. In 1999, the company generated \$1.2 billion in sales, received more than 68 million sales and customer service calls, shipped more than 34 million packages and currently services a growing customer base of more than 5 million. Dave Aldridge describes his role as architect in aligning IT with HSN's transformation to a new commerce business model, and outlines specific challenges for CIOs charting an organization's strategic future.

10:30 am - 11:00 am **Coffee Break**

11:00 am - 12:30 pm **The New CIO**



**Michael Earl**  
Professor of Information Management  
London Business School

Based on a global survey of nearly 100 CIOs, Michael Earl has plotted substantial role changes for CIOs in recent years, and has identified even greater transformations to meet the challenges of the new economy. Earl describes these changes, analyzes the skills and experience required of the new CIO, and discusses executive time allocation. He suggests that the job of CIO as we know it may become too large and demanding for just one person to handle. He illustrates his presentation with data and examples gathered in the summer of 2000 from the US and Europe.



## MONDAY, OCTOBER 16 (con't)

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:30 pm - 1:30 pm | <b>Luncheon</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1:45 pm - 2:30 pm  | <b>Business Briefings: Brio, Cable &amp; Wireless, Changepoint, Chordiant</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 2:35 pm - 3:20 pm  | <b>Business Briefings: Citrix, E.piphany, EDS, Enterasys</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3:25 pm - 3:50 pm  | <b>Coffee Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3:55 pm - 4:40 pm  | <b>Business Briefings: Genuity, HP, IBM, IDC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4:45 pm - 5:45 pm  | <b>Venture OnStage: What's Just Around the Corner?</b><br><b>Chris Lindquist</b> - Moderator<br><i>Technology Editor</i><br><i>CIO Magazine</i><br> <p>Be among the first to see hot new technologies, products and services! We're challenging the chief executives of five companies to tell us — in under ten minutes each — why their newest technology or service should give us greater expectations. The five finalists represent companies that have been through at least one round of financing, and whose product has been marketed for less than a year. They've already withstood a winnowing process by a jury of <i>CIO</i> magazine executives ... but are they ready for you? You be the judge.</p> |
| 5:45 pm - 7 pm     | <b>Reception</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7 pm - midnight    | <b>Hospitalities/Networking</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## TUESDAY, OCTOBER 17

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7:30 am - 8:30 am  | <b>Breakfast</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 8:30 am - 9:30 am  | <b>Enabling Visions: The CEO-CIO Relationship</b><br><div> <div>  <p><b>John J. Brennan</b><br/> Chairman and CEO<br/> The Vanguard Group</p> </div> <div>  <p><b>Robert DiStefano</b><br/> Managing Director of Information Technology<br/> The Vanguard Group</p> </div> </div> <p>Businesses have a hierarchy of IT needs characterized by increasing complexity and risk. Every IT task can be categorized as one of three types: 1) automating the business; 2) expanding the business; or 3) reinventing the business. In each of these scenarios, the most difficult technology and business questions typically revolve around what to do, not how to do it. Chairman and CEO John J. Brennan and Robert DiStefano, Managing Director of Information Technology, will team up in this presentation to discuss strategic decision-making and the CEO-CIO relationship at The Vanguard Group, the world's second-largest mutual fund company. Brennan will discuss his vision for technological innovation at Vanguard, and DiStefano will outline how IT works with business to carry out that vision.</p> |
| 9:30 am - 10:30 am | <b>The Role of the CIO at eSpeed</b><br> <p><b>Sandy Goldstein</b><br/> Senior Vice President and CIO<br/> Airgas, Inc.</p> <p>E-commerce is driving the corporate agenda, and changing the influence of the CIO in strategic planning, operations, customer relations and in the board room. Goldstein addresses the transformation of IS strategies to business and operating strategies; IS budgets to capital raising/P&amp;L administration; human resources management to joint ventures/partnerships creation; and corporate navigation to corporate governance. He compares aligning information services with the business and customers; and information services driving business strategies for the new on-line economy. Goldstein and two Airgas customers offer strategies to communicate with and anticipate the needs/demands of increasingly complex workplaces and sophisticated on- and off-line customers.</p>                                                                                                                                                                                                                                                                   |
| 10:30 am - 11 am   | <b>Coffee Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 11 am - 11:50 am   | <b>Business Briefings: Information Builders, Intel, Intentionia, Intira, Iomega</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Noon - 1 pm        | <b>Luncheon</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



## TUESDAY, OCTOBER 17 (con't)

1 pm - 2 pm

**Thoughtful Alignment and Local Entrepreneurship: A Business and IT Strategy****Harriet Edelman**Senior Vice President and CIO  
Avon Products, Inc.

Avon, in its third century, operates in 135 countries through a direct sales force of 3,000,000. The business is undergoing a transition from a single to multi-channel world and overall transformation of a traditional business model. Avon is not post-ERP, so the challenge is to improve the fundamentals while quickly delivering customer-facing applications. Edelman outlines how to take a business strategy that is stated at a high level and drive the IT strategy to better align with it. Avon IT has a legacy of significant decentralization, so the plan going forward must be executed with greater alignment and coordination — while preserving local entrepreneurship.

2 pm - 2:50 pm

**Business Briefings: Kyocera Mita, Legato, Lockheed, Lucent, NetScout**

3 pm - 3:50 pm

**Business Briefings: Powerware, Prosight, Symantec, Xerox**

3:50 pm - 4:15 pm

**Coffee Break**

4:15 pm - 5:45 pm

**Cultural Capital and the New Frontier of Competitive Advantage: Tools for Measuring Your Culture and Mapping Your Values****Richard Barrett**Author, *Liberating the Corporate Soul: Building a Visionary Organization*

According to Barrett, the three biggest issues in business today are how to become more profitable; how to attract and keep the best people; and how to release new levels of employee creativity and productivity. All can be addressed by building cultural capital. Employees remain at organizations whose values and vision are in alignment with their own, whose leaders empower rather than exploit, and where they will feel a sense of community and ownership. A values-based culture that focuses on employee fulfillment is the number one attribute for success. To create such a culture, you need to manage and measure it.

5:45 pm - 6:45 pm

**Reception with Richard Barrett**

7 pm - midnight

**Hospitalities/Networking**

## WEDNESDAY, OCTOBER 18

7:30 am - 8:15 am

**Breakfast**

8:15 am - 8:30 am

**KnowPulse Poll Results****Abbie Lundberg**Editor in Chief  
CIO Magazine

Lundberg will present the results of Monday morning's poll.

8:30 am - 10:30 am

**Globalization and Corporate Strategy: What Every CIO Should Know****Jeffrey Garten**Dean and William S. Beinecke Professor in the Practice of International Trade and Finance  
Yale School of Management  
Author, *World View: Global Strategies for the New Economy*

Conducting business in the global arena entails planning and executing corporate strategies in revolutionary ways. Corporate leaders need to rethink every aspect of the company, the marketplace, and the competition. Using research from his recent book, and interviews with 40 of the world's top CEOs for his forthcoming book, Garten describes some of the key themes that have emerged. He also provides his personal evaluation of whether these strategies are up to the formidable challenges he sees ahead.

10:30 am - 11 am

**Coffee Break**

11 am - 11:30 am

**Question & Answer Session with Jeffrey Garten**

11:30 am - 11:45 am

**Closing Remarks  
Dr. Jim Wetherbe**



## MONDAY, OCTOBER 16

1:45 pm - 2:30 pm

### B2B Analytics: Transforming the Landscape of eBusiness



**Katherine Glassey**  
CTO  
Brio  
Technology, Inc.

Companies require B2B analytics to measure and drive improved business performance. These analytics must be simple and intuitive, serving the needs of the individuals throughout an organization, addressing all relevant information sources.

Organizations must manage e-business effectively, responding to opportunities quickly and staying ahead of competitors. This requires business intelligence integrating business with traditional channels and partners, internal and external data, and strategic information with tactical data.

E-business analytics empower organizations to create and deliver shared, actionable information wherever it is required along the e-business value chain. Insight into your e-business using these analytics will separate the winners from the losers in the new e-economy.

### Creating Partnerships: Innovative Approaches to Delivering E-Speed Customer Solutions



**Robert Flood**  
CTO  
Cable &  
Wireless, Inc.

IP technology is driving e-business and changing the way we do business — and the way we support performance-driven customer strategies. Do shifting technologies require thinking about partnerships as an effective way to provide innovative approaches to

customer e-solutions? Flood explores what customers think about the need to deliver solutions globally as they look ahead to growing their business. Participants will look at what it takes to develop an effective partnership that's a win-win for all parties. He also describes some of the attributes of companies that make the best partners. Flood highlights a partnership case study and explains why was the partnership initiated, and the benefits and difficulties.

### A Success Story: How Guardian Insurance Manages Their IT Like a Business

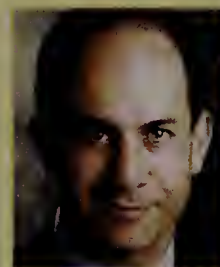
**Joe Connell**  
Vice President, Information  
Technology  
Guardian Life Insurance  
Company of America

#### Courtesy of Changepoint

Connell discusses Guardian's ongoing transformation of its IT department and its culture: how they are meeting the increasing and always-changing demand for advanced high-quality IT services with a limited number of dedicated resources; making client satisfaction a top priority for the IT department; providing IT business leadership in the organization; establishing IT metrics that enable for strategic planning, plus show the benefits of IT work throughout the business; and "professionalizing" IT — attracting and retaining high performers in IT, plus enhancing their career opportunities.

2:35 pm - 3:20 pm

### Corporate Portals: Transforming the Desktop into a Doorway



**David Weiss**  
Vice President  
Marketing  
Citrix Systems, Inc.

A corporation's voracious appetite for information — delivered quickly, efficiently and universally — is a given. The challenge facing CIOs is how best to feed this hunger. Traditional desktops, fat with installed applications and tools, are morphing into Web-based "doorways" to information stored elsewhere — in data warehouses, on company and ASP servers, and on the Web. Corporate portals promise greater productivity, ease of use and cost savings. But their success hinges on accessing all information, including existing applications, via a Web browser. A key enabler of the portal trend is new technology providing instant "Webification" of server-based applications. By accelerating Web enablement of existing solutions, this technology flings open the door to a new era in information access.

### Capitalizing on The Digital Economy

#### Courtesy of EDS

CIOs are reinventing their enterprises. They're striving to meet the demands of continuous change, cope with the reality of unstable marketplaces, and respond to unpredictable sources of competition. How will you deliver creative strategies and superior expertise to meet these demands? How will your prospects become new customers? In this session, EDS will show you ways to turn these challenges into successes. By capitalizing on the digital economy, your company will be prepared to win against its toughest opponents.



3:55 pm - 4:40 pm

### Successful IT Planning

Courtesy of IDC

Once companies set their corporate business directions, they begin to form a plan for information technology to support their goals. Done well, IT planning becomes a tapestry of mission statements, business objectives, and strategies. Increasingly, CIOs are faced with the challenge of creating IT plans that achieve business goals through technology innovation. To help CIOs with this challenge, IDC has created an IT planning approach that CIOs can customize and apply to create a business-focused strategic IT plan. Learn about this approach, along with an integral proven planning model for ranking and selecting the right IT strategies for investment. IDC's technology planning expert will also discuss how he has applied the approach to help other CIOs create successful IT plans.

**TUESDAY, OCTOBER 17**

11:00 am - 11:50 am

### U. S. Bank and Information Builders: Building an Architecture for E-Business



**Chris Clemens**  
Vice President  
Business  
Architecture  
**U.S. Bank Electronic  
Payment Systems**

Courtesy of Information Builders, Inc.

As the world's largest issuer of procurement cards, U.S. Bank is a critical enabler to e-commerce. Clemens explores how U.S. Bank is teaming with Information Builders to build an Internet-based commercial payment system to meet the demand for sophisticated

payment transactions for B2B e-commerce. Extending U. S. Bank's card management system to partners, this system will ultimately allow customers to analyze transactions as part of B2C and CRM initiatives. Information Builders' end-to-end solutions for business intelligence and enterprise integration enable customers like U.S. Bank to quickly and cost-effectively meet market challenges.

### Building a Third Generation e-Business Data Center



**Christopher S. Thomas**  
Chief eMarketing  
Strategist  
IA Solutions  
Channels Group  
**Intel Corporation**

The evolution of Internet Business is moving at a stunning pace. Is your company ready for the third generation of Internet Business? E-Business today is shifting the computing epicenter from the fortress of the traditional data center to the rough-and-tumble world of customer-facing systems and front-end web servers. And in this customer-centric world of the Third Generation, companies are creating not just supply chain linkages but entire lattices with automated, bi-directional rules-based links between numerous vendor systems and customer systems. So how can you build your company's business Internet systems and solutions to handle this new e-Business environment? Thomas examines the new technologies that will help you succeed in this new era.

### The Balancing Act: E-Business & the Information Backbone



**Ed Koepfler**  
President  
**Intentia Americas**

Ice cream, furniture, personnel recruitment, and dairy businesses. What do they have in common? They figured out how to be profitable with e-business. What's their secret? They learned to leverage best practices and effective management approaches with the right information technology backbone to ensure success. Koepfler explores the strategies, implementation and payback of completing an enterprise infrastructure for the greatest impact on business and e-business.

### The Future of Technology



**Dana R. (Rick) Richardson**  
President  
**Richardson Media & Technologies**

Courtesy of Iomega Corporation

Rick Richardson provides participants with his vision of both our near and longer-term future as it relates to technologies important to the CIO and IT professional. Topics will include a review of last year's predictions, current trends in hardware, software and communications, and emerging technologies that will help bring those trends to reality. Richardson also discusses the future of removable storage and data transfer. Finally, he goes on the line with his forecasts of our technological future. Richardson will bring along some of the newest technologies to use in delivering his presentation.



**TUESDAY, OCTOBER 17**

**2:00 pm - 2:50 pm**

**Kyocera Mita**



**Bob Sostilio**  
*Director, Converging  
Digital Peripherals  
CAP Ventures*

**Courtesy of Kyocera Mita America, Inc.**

Why are digital based copiers, facsimile transceivers and printers establishing higher penetration rates into the office space on a daily basis? Are these digital platforms restricted to specific work environments with specific functionality? Are they providing integration of functionality and creating higher workgroup productivity across the enterprise?

Come hear an industry expert's view on the trends of converging functionality and which manufacturers and resellers are delivering seamless integration of digital functionality.

Sending information to and from internal and external clients are challenges companies face today. Discover how clients view, store, edit and distribute data without being retrained on new technology or print drivers. Decide if office equipment manufacturers have developed true-life plug and play peripherals with standard user interfaces and common print drivers. You'll be sure to walk away with new insight, ideas and viewpoints on communicating more efficiently with internal and external clients.

**Information Continuance:  
Information Wherever You Need It,  
Whenever You Need It, On  
Whatever Platform Is Required**

**George Symons**

*Vice President, Product Development  
Legato Systems, Inc.*

It doesn't matter how complex your computing environment is, or how constrained you are by time, budget, and staffing. If you're an IT decision-maker today, you live and die by one metric: the availability of mission-critical information wherever it's needed, whenever it's needed, on whatever platform is required.

This is called "information continuance," and it is an essential goal for any enterprise in an e-commerce, multi-platform world. Achieving information continuance demands a range of solutions that tackle three fundamental tasks: protecting information; moving information; and managing information.

Symons discusses how businesses must protect, move, and manage data across the enterprise if they are going to succeed in leveraging their information assets and adding value for their customers.

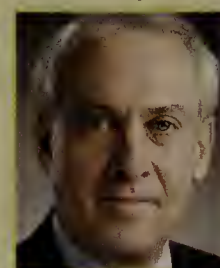
**Getting the Risk Out of E-Business**

**Courtesy of Lockheed Martin**

The Internet is profoundly changing the way business is conducted. The "hidden" e-Business imperative is that Internet transactions can't be allowed to put your company, vendors, employees, customers and others at risk. What's needed is rock-solid planning and bulletproof IT infrastructure to maximize Net profit and minimize risk. Industry experts will talk about balancing risk and reward and lessons in building an e-Business-ready infrastructure. Participants are encouraged to take a broad view of the transformation of business into e-Business. Business models and processes, applications, and technology infrastructure

are all deeply affected by this transformation. Its impact and the associated risks need to be clearly understood and managed in order to make the most of the opportunity. This briefing will be followed by a roundtable discussion with the experts.

**Keys to the Virtual eBusiness  
Enterprise: Communication-  
enabled Portals Delivered by CIOs  
as Enterprise Service Providers**



**Martin F. Parker**  
*Vice President  
Strategy and  
Portfolio Planning  
AVAYA  
Communication*

The virtual enterprise is the operating paradigm for eBusiness, with each enterprise creating its best core value proposition through networked combinations of suppliers, partners and employees and then presenting these capabilities to customers through global networks. One key to success is powerful, consistent communication links throughout the virtual enterprise.

Communication-enabled Portals are the optimum vehicles for these linkages, facilitating long-term, high-value business relationships through both human and system interactions. Another key is the orchestration of eBusiness service delivery to the virtual enterprise, where CIOs and their teams may emerge as "Enterprise Service Providers," delivering a modular blend of both internally-produced and externally-sourced eBusiness services. Parker discusses opportunities for engagement and exploitation in these two key areas of eBusiness.



3:00 pm - 3:50 pm

### CIO As Strategist: How ITM placed A CIO at the Strategy Table



**Walter Weir**  
CIO  
University of  
Nebraska



**John Cimral**  
CEO  
ProSight, Inc.

The challenge of managing and meeting the expectations of all IT stakeholders is a constant battle for CIOs. Go from the private to the public sector, and these challenges are compounded. Imagine the University of Nebraska, a \$1.3 billion public institution, balancing the needs of faculty, administration, students, academic leadership AND the public. Examine how they communicate the carefully scrutinized consumption of tax dollars and demonstrate the value returned from almost \$100 million spent on IT each year. Walter Weir explains how he put an IT Management (ITM) system in place to communicate in a common business language across the institution, and ensure the alignment of IT spending with the University's objectives. More importantly, this system allows Weir to position IT as the driver of overall organizational strategy, rather than the other way around.

### Network Security: Past and Present



**Cress Carter**  
Vice President, North  
America Enterprise  
Sales and Marketing  
**Symantec  
Corporation**

In the 1960's and 1970's, network security was a matter of "gates, guns, and guards," where security could be maintained by simply

preventing intruders from physically breaking into a facility.

In the 1980's and early 1990's, the "find and fix" approach took hold as technologies such as client/server computing and the Internet fueled new, more complex security challenges. As one company after another fell victim to a variety of security threats, commercial software providers responded with products targeted at individual areas of concern.

Today, IT professionals are beginning to realize that maintaining security requires more than simply locking one door at a time. Instead, they are challenged to minimize security risks at all points across the enterprise — a daunting task considering the labyrinth of applications and hardware involved.

### Enterprise Success: A Case Study

#### Courtesy of Xerox Corporation

In partnership with one of their leading customers, Xerox showcases innovative industry-focused solutions and services that help CIOs improve key processes and resolve today's business problems. By combining global capabilities and world-class partners from information technology, document management and knowledge sharing, the presenter offers solutions to help customers become more efficient while anticipating and responding to future market changes and opportunities.

### Business briefings will also be presented by:

Chordiant Software, Inc.  
Enterasys  
E.piphany, Inc.  
Genuity  
Hewlett-Packard Company  
IBM Corporation  
Intira Corporation  
NetScout Systems, Inc.  
Powerware

# Venture OnStage



## NEW! Venture OnStage: Are These Entrepreneurs Ready for Prime Time?

For this conference, we've added a new feature that will generate more excitement — and probably plenty of heated discussion: Venture OnStage!

Our esteemed jury of CIO magazine executives has weighed the merits of submissions from companies who think they have hit upon "the next blockbuster idea." In order to qualify, these companies have been through at least one round of financing, and have marketed their product, service or technology for less than a year.

We've winnowed the hopefuls down to five finalists, and we're challenging their chief executives to convince us — in under ten minutes each — why their newest technology or service should indeed give us greater expectations. You get the chance to pepper them with questions, and decide whether or not they are ready for prime time.





# hosts



**AVAYA Communication**, formerly the Enterprise Networks Group of Lucent Technologies, is a leading provider of communications and networking technology for businesses, with a customer base that includes 90 percent of the Fortune 500. We provide a full array of business communications solutions — including service and support functions — for voice and data networks, customer relationship management and call centers, and messaging. AVAYA Communication will be the worldwide leader in messaging and call centers and the U.S. leader in voice communications systems for both large and small businesses.



**Brio Technology, Inc.** is the only business intelligence software provider to offer a complete, integrated analytic infrastructure that addresses the decision-making needs of today's e-business/business to business world. The Brio ONE solution — including Brio. Enterprise, Brio.Report, Brio.Portal, and Brio.Applications — enables organizations to build and deliver business intelligence, enterprise reporting, and analytic applications to users in Intranet, extranet, and hosted application environments, all with unmatched ease of experience and scalability.

Contact Brio at 1-800-879-BRIO, or at [www.brio.com](http://www.brio.com).



## CABLE & WIRELESS

With customers in 70 countries, **Cable & Wireless** is a major global telecommunications business offering a range of services spanning broadband data and Internet, fixed and mobile voice, as well as interactive entertainment and information.

Cable & Wireless' priority for expansion is the fast growing market of data and IP (Internet Protocol) services for business customers. It is making major investments in developing advanced networks and services in the United States, Europe and the Asia Pacific region to build the world's leading global IP infrastructure. With the capacity of this advanced infrastructure and its presence in key business markets, Cable & Wireless holds a unique position in terms of global coverage and services to business customers.



## Changepoint Corporation

IT executives are making intelligent and profitable informed strategic business decisions — all while reducing their administrative and resource costs. Changepoint for Enterprise IT is a fully integrated corporate IT management software solution that empowers IT executives to centrally deploy, manage and measure time, costs, skills and productivity of both

internal resources and external contractors. Prepare your corporate IT initiatives with an end-to-end view of the entire IT services supply chain. Visit us at [www.changepoint.com](http://www.changepoint.com).



**Chordiant Software** builds customer relationship management applications tailored for business-to-consumer companies, serving traditional and e-business environments, with a single view of the consumer.

Unlike Web-only and customer relationship point solutions, Chordiant's flagship product, Chordiant CCS — Customer Communications Solution — embraces new customer communications methods while leveraging existing ones.

Chordiant unifies Web, branch and call centers through a single customer model that integrates all services, offerings and business goals. As a result, Chordiant allows enterprises to retain customers and grow revenue by enabling more sophisticated relationships.



**Citrix Systems, Inc.** is a global leader in application server software and services that offer "Digital Independence™" — the ability to run any application on any device over any connection, wireless to Web.



Citrix's solutions enable organizations to reach more users, with more applications, in more locations — and achieve this with greater speed and predictability, and lower costs.

Founded in 1989, Citrix is one of the world's fastest-growing software companies, with more than 100,000 customers worldwide, including every one of the FORTUNE 100 firms. Its products, including MetaFrame™ software and Independent Computing Architecture (ICA), have been widely adopted by the corporate mainstream to achieve key business goals.



**EDS** is a professional services firm that applies consulting, information and technology in innovative ways to enable clients to improve their overall performance.

Through an "end-to-end" portfolio of services that includes all aspects of electronic business, EDS is the provider of choice for thousands of leading businesses and governments around the globe. EDS' business is making clients more successful. The company works with its clients to extend their enterprises and catapult them ahead of the competition. It provides thought leadership and creates measurable value by unleashing the full potential of information and technology.

For more information about EDS, please visit [www.eds.com](http://www.eds.com).

## ENTERASYS NETWORKS™

**Enterasys Networks** provides powerful and intelligent infrastructure solutions for today's Global 2000 enterprise customers. By optimizing its solutions to support converged voice, video and data resources, Enterasys builds a solid end-to-end foundation for the seamless deployment of emerging e-business applications.

Flexible and highly manageable, Enterasys solutions scale to meet changing customer demands while protecting investments and lowering cost of ownership. With industry-proven technology, strategic partnerships and 24 x 7 worldwide support, Enterasys delivers maximum competitive advantage through the communications infrastructure.

For more information, visit us on the Web at [www.enterasys.com](http://www.enterasys.com).



**E.piphany** is the leading provider of intelligent customer interaction software for the customer economy. Delivering an integrated solution combining insight and action software products, E.piphany's Web-based analytic and operational CRM portfolio provides global business with a single, enterprise-wide view of each customer, to better understand and proactively respond in real-time to customer and market opportunities. Through feature-rich E.piphany products, including the E.4 System,

all inbound and outbound sales, service and marketing interactions are unified through multi-channel customer touchpoints and rich analytics. E.piphany serves the industry-leading enterprises in e-commerce, financial services, communications, consumer-packaged goods and technology.

## GENUITY

**Genuity Inc.** is a leading facilities-based provider of high quality, managed Internet infrastructure services to enterprises and service providers. Genuity offers a comprehensive suite of managed Internet infrastructure services, including: Internet access through dial-up, dedicated and digital subscriber lines; Web hosting and content delivery; and value-added e-business services such as virtual private networks (VPNs), security services and voice-over-Internet Protocol. With extensive IP experience, the company integrates its suite of services into corporate networks and delivers high-performance, secure and scalable infrastructure services for conducting business on the Internet. Visit Genuity at [www.genuity.com](http://www.genuity.com).





# hosts



i n v e n t

**Hewlett-Packard Company (HP)** is a leading global provider of computing and imaging solutions and services for business and home. HP capitalizes on the opportunities of the Internet and the proliferation of electronic services. We are the second-largest computer supplier in the world, with 83,200 employees worldwide and revenue from continuing operations of \$42.4 billion in the 1999 fiscal year.

HP is extending its leadership in enterprise computing to the Internet marketplace, specifically in the areas of e-services and digital imaging. HP will enable the vision of e-services via partnerships and ventures of its own in the areas of apps-on-tap, which is pay-as-you-go software, and e-service portals.



**IBM** has introduced the world's most powerful Intel-based server, the 64-processor NUMA-Q E410, along with the industry's most affordable technology-leading two-way server, the Netfinity 3500 M20. These products represent the high-end and the low-end of the industry's most scalable Intel-based server line for e-business running Windows 2000 and Linux environments. Visit our Web site at [www.ibm.com/servers/](http://www.ibm.com/servers/).



**IDC** is a leader in delivering reliable and insightful IT data, analysis, and opinions to enable organizations to successfully participate in the Internet economy. Founded in 1964, this worldwide company employs more than 650 industry analysts who cover a broad spectrum of technology and management areas. IT professionals and executives rely on IDC's research and advisory services for clarification, validation, and guidance in their tactical and strategic IT decision making.

Let IDC help you realize maximum value and ROI from the dollars you spend applying IT to business strategy.

Visit IDC's Web site at [www.idc.com/itadvisor](http://www.idc.com/itadvisor) or call 1-800-343-4952 ext. 4773 for more information.



**Information Builders** helps organizations grow their businesses through the power of information. Its i-business software solutions combine data integration and business intelligence, giving people the ability to access and share real-time information over the Internet. Headquartered in New York City, Information Builders is one of the largest independently owned software companies in the world with more than 5,000 customer sites, including 92 of the top 100 corporations, currently using its technologies.



For over three decades, **Intel Corporation** has developed technology enabling the computer and Internet revolution that has changed the world. Intel is at the forefront as a primary building block supplier for the Internet economy. Today, companies incorporate Intel architecture-based solutions across their connected business and IT environments to create successful e-Business infrastructures: from Internet servers to data center systems, desktops to workstations, and laptops to network PCs and online services. For more information on Intel and its role in e-Business, visit us on the Web at [www.intel.com/eBusiness](http://www.intel.com/eBusiness).



**Intentia International** is one of the world's leading suppliers of Enterprise Applications to companies that manufacture products in discrete and process environments. Intentia is an ISO 9000 certified software developer and worldwide IBM development partner for the IBM AS/400. Our Enterprise Application, Movex, is designed to improve the underlying business processes within distribution and manufacturing companies, in the areas of logistics, production, distribution and finance. Available in 24 languages, Movex is implemented in more than 4,000 sites worldwide.



For more information, please call  
1-800-SW-MOVEX or visit us at  
[www.intentia.com](http://www.intentia.com).



**Intira Corporation** is a provider of Netsourcing — the outsourcing of the complex IT and network infrastructure required to support mission-critical e-business applications. Intira Netsourcing Solutions incorporate highly skilled technical resources, highly automated operations, a suite of value-added services, and a seamlessly integrated world-class infrastructure — Enterprise-Class Data Centers and superior-quality broadband network — operationally controlled by state-of-the-art Service Management Centers. Intira's comprehensive Service Level Agreements ensure application availability up to 99.95 percent, while the OneSource-OneCall customer support program provides a single point of accountability.

Customers include Fortune 1000 organizations, dot.com companies, ASPs, and ISVs that depend on the availability of their mission-critical e-business applications. Visit Intira at [www.intira.com](http://www.intira.com), or call 888-326-3638.



**Invensys Power Systems**—secure power, ensures critical business uptime with its industry-leading UPS hardware, innovative software and global services for total power management solutions. Invensys Secure Power's comprehensive product offerings deliver high-level systems availability to a broad range of applications — from e-business to global networks, ISPs, industrial and communications equipment. Because when your systems aren't up and running, your business halts.

Invensys Secure Power is comprised of the leading brands, Powerware, Best Power and IPM. For more information, visit our Web site at [www.invensys-power.com](http://www.invensys-power.com).



**Iomega Corporation**, a leader in smart, portable storage solutions, manufactures and markets the award-winning Zip®, Jaz® and Klik!® drives and disks and markets the ZipCD® CD-RW drives and discs that help mobile and desktop users in business, government and education to organize, manage, create, exchange and share their important information. Iomega Corporation can be reached at 800 MY-STUFF (800 697-8833), or on the Web at [www.iomega.com](http://www.iomega.com).



**Kyocera Mita America, Inc.**, is a leader in digital document imaging. As part of the \$7.5 billion Kyocera Corporation, KMA is known for developing economical, ecologically sound print engines, state of the art controllers and network tools plus years of innovation in copier technologies, paper handling and manufacturing experience. The product line includes network ready computer connectable digital printers, printer/copiers, color printer/copiers, multifunctional and wide format imaging solutions. For more information, visit [www.kyoceramita.com](http://www.kyoceramita.com).



**Legato Systems, Inc.**, is a worldwide leader in the enterprise storage management software market. Helping companies leverage business-critical corporate data assets, Legato's products and services enable information continuance, a seamless approach to the movement, management and protection of data throughout an enterprise. Founded in 1988, Legato's storage management software products have become the recognized industry standard with the largest installed base representing over 60,000 customers.





# hosts



## LOCKHEED MARTIN

Integrated Business Solutions Company, headquartered in Orlando, FL, is the commercial IT services arm of the **Lockheed Martin Corporation**. IBS is an international IT services provider that partners with customers for IT outsourcing, e-business solutions, enterprise systems integration, and technology training solutions. Lockheed Martin is a global enterprise principally engaged in the research, design, development, manufacture and integration of advanced-technology systems, products and services. For more information about Integrated Business Solutions, visit our web site at [www.ibs-lmco.com](http://www.ibs-lmco.com).



## NetScout.

*Because the network is the business.™*

### NetScout Systems, Inc.

(Nasdaq:NTCT) is a leading provider of network and application performance management solutions. NetScout's solutions ensure e-business applications stay up and running at optimum performance through real-time, system-wide visibility and actionable information for fault isolation.

NetScout's unique Application Flow Management (AFM) technology collects and presents the rich set

of application and Web traffic information via NetScout's application-aware instrumentation and reporting and analysis software. Further information is available at [www.netscout.com](http://www.netscout.com).



## ProSight

**ProSight**, the leader in IT Management (ITM), is equipping IT organizations with the first of its kind IT Management application, enabling CIOs to:

- **Align** IT spending with key business objectives
- **Communicate** across the enterprise in a common business language
- **Measure** IT effectiveness and efficiency through key performance indicators

With ProSight, IT organizations accelerate time to market, lower project failure rates, improve customer satisfaction and develop strategies that support key business objectives. Productivity is increased as IT management activities are automated, and the entire team has instant access to job critical information from a single source. Visit us at [www.prosight.com](http://www.prosight.com).

## SYMANTEC.

**Symantec**, a world leader in Internet security technology, provides a broad range of content and network security solutions to individuals and companies. The company is a leading provider of virus protection, risk management, Internet content and e-mail filtering, and mobile code detection technologies to enterprise customers. Headquartered in Cupertino, CA, Symantec has worldwide operations in more than 24 countries. For more information please visit [www.symantec.com](http://www.symantec.com).

## XEROX

**Xerox Corporation** is the leader in the worldwide document market, providing solutions that enhance customer productivity. Xerox' solutions and systems are designed to help offices around the world capture, share and use knowledge. The company has unparalleled expertise in the document space — both paper and electronic — and provides industry-specific, global document solutions, based on its hardware, software, network and consulting services.

Xerox is the only document services provider with a global sales, service and manufacturing capability. The \$19 billion company is headquartered in Stamford, CT. For more information, visit [www.xerox.com](http://www.xerox.com).



# Arizona Biltmore Resort & Spa



This Frank Lloyd Wright-inspired resort holds a direct link to the fabled architect. Wrapped in history, this world-renowned destination has been crowned "The Jewel of the Desert."

Guests may try a leisurely outdoor game of lawn chess or croquet, or challenge the club pro on one of the resort's seven tennis courts. Others may choose a different way to enjoy the surroundings...from a golf cart. A myriad of biking and hiking trails, or the state-of-the-art workout facilities, provides the ultimate in exercise or pamper yourself in the 22,000 sq. ft. European Spa.



Greater

# EXPECTATIONS

The CIO and Corporate Strategy

## ENROLLMENT FORM

Please visit our Web site at [www.cio.com/conferences](http://www.cio.com/conferences) or Call us at 800 366-0246. You may also Fax the completed form to 508 879-7720 or mail to: Executive Programs, CXO Media, Inc., D3620, Boston, MA 02241-3620.



**October 15-18, 2000**  
**Arizona Biltmore Resort & Spa**  
**Phoenix, AZ**

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_ MAIL STOP \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

E-MAIL \_\_\_\_\_ COMPANY WEB SITE ADDRESS \_\_\_\_\_

WHAT IS YOUR INDUSTRY? \_\_\_\_\_

WHAT ARE YOUR ORGANIZATION'S ANNUAL REVENUES OR ASSETS? \_\_\_\_\_

WHAT IS YOUR ANNUAL IT BUDGET? \_\_\_\_\_

YOUR NAME AS YOU WANT IT TO APPEAR ON YOUR BADGE \_\_\_\_\_

NAME OF COMPANION (IF PARTICIPATING IN COMPANION PROGRAM) \_\_\_\_\_

**HOTEL ACCOMMODATIONS** - We urge you to make your reservations early by calling the hotel at 602 955-6600 ext. 5400 and identifying yourself as part of the **CIO** conference to receive the conference rate. **CIO will make hotel reservations for government/military participants only.** Be sure to guarantee your room with a credit card, as all unreserved or unguaranteed rooms will be released on September 8, 2000. Hotel reservations, cancellations and charges are your responsibility. If a **CIO** conference Enrollment Form is not received within 48 hours of making your hotel reservation, your room will be released from the **CIO** room block.

**ENROLLMENT FEES** - All enrollment fees must be paid in advance of the meeting. Fee includes conference sessions, business briefings, Corporate Host displays, conference materials, scheduled meals, receptions and entertainment. Transportation, hotel and recreation are your responsibility. **Please note that submission of this enrollment form to CIO obligates the attendee/sender for the enrollment fee.**

**CANCELLATION** - ALL CANCELLATIONS OR SUBSTITUTIONS MUST BE MADE IN WRITING. You may cancel your conference or companion enrollment up to September 15, 2000 without penalty. A \$250 administration fee will be imposed for cancellations received between September 16 - September 29, 2000. **No refund or credit will be given for cancellations after September 29, 2000 or for no shows.** You may send a substitute in your place. **CIO** reserves the right to decline enrollment to any registrant.

**If this is your first CIO conference, your business card is required in order to process registration.**

### CHECK ALL THAT APPLY:

#### Enrollment Fees:

- ☐ **IS PRACTITIONER/EXECUTIVE = \$2,480**  
This fee applies if you are a CIO, IS executive or hold another executive position other than those listed below.
- ☐ **GOVERNMENT/MILITARY = \$2,745**  
This fee includes your hotel for three nights. Do not make your hotel reservations, **CIO** will make them for you.
- ☐ **SALES/MARKETING/CONSULTING = \$10,000**  
This fee applies if you hold a sales, marketing, new business development or consulting position, including executive management of IT vendor and consulting companies. This fee is payable by company check only. **CIO** will make the final determination of this category.
- ☐ **COMPANION PROGRAM = \$325**  
Companions must be enrolled in this program to attend any conference-related functions. Includes all scheduled meals, receptions, entertainment, companion breakfast, a stretch and tone class, and planned companion activities. Conference session attendance is not included.

### PAYMENT:

TA1

- ☐ Check enclosed
- ☐ P.O.# \_\_\_\_\_  
(A complete Purchase Order must be submitted within 10 days)
- ☐ AMEX ☐ Visa ☐ MC Exp. \_\_\_\_\_  
Credit Card # \_\_\_\_\_  
Signature \_\_\_\_\_
- ☐ I am not staying at the Arizona Biltmore Resort & Spa.  
Name of alternate hotel \_\_\_\_\_

**To enroll, CALL 800 366-0246, visit our WEB SITE at [www.cio.com/conferences](http://www.cio.com/conferences) or FAX us at 508 879-7720.**



**If we put our Research Centers, Discussion  
Forums, Sound Off, Ask the Experts, B2B Network,  
CIO Wanted, CIO Radio, Article Archives, Events  
Calendar, and Analyst Corner, all into our magazine  
you would need a really really  
really big mailbox.**

**(So we just put them on our site.)**

You're looking for research. Or articles. Or a job. Or even a business solution. There's one place to go. At CIO.COM, you can find past articles, research, employment opportunities, or even vote in the Quick Poll. Catch the latest in Sound Off, Ask the Expert or CIO Radio. Or the latest CIO Knowpulse™ results. It's all at your fingertips. The most current information available. From the resource you know and trust. CIO.COM.

*Tell us what you think of CIO.COM. Call Tim Horgan, CIO's Senior Vice President & General Manager, at 508 935-4087 or email him at [thorgan@cio.com](mailto:thorgan@cio.com).*



The dot.com you know.  
The dot.com you trust.



## PREDICTIONS

## multitenant broadband

## Broadband's Building Boost

IF YOU'VE GOT your eye on DSL or cable modems as the ideal access solution for your branch offices and remote workers, you may be missing a better option. A number of companies are taking proven broadband technologies such as T1 and T3 and making them available to a wider range of customers through "multitenant broadband" applications.

The concept is simple enough: Run a high-speed pipe to the basement of a commercial or residential building, then let all the tenants share the cost. The idea isn't new, but the timing is finally right. According to a report by Scottsdale, Ariz.-based research firm Cahners In-Stat Group, multitenant broadband services and equipment sales should jump from \$371 million this year to nearly \$2 billion in 2004.

The companies, such as Allied Riser Communications Corp. and CAIS Internet, are making an end run around the slow deployment issues plaguing the DSL and cable modem markets by offering reliable technology at competitive costs, says In-

Stat analyst Mike Wolf. These providers approach building owners and offer broadband services as a means of attracting and retaining tenants. To ease installation, they often use existing phone wiring or wireless networking hardware to avoid any problems running cable—a particular issue in older complexes.

Putting employees in one of these buildings has some obvious advantages for corporations. First, the broadband access some employees need already exists. Even better, the service providers often provide support for the network, so neither the building owner nor the tenants need to keep a support person onsite or send one out every

time a problem appears. Wolf says the providers also plan over time to offer more advanced and business-friendly services, such as voice, virtual private networking and videoconferencing.

The biggest problem may be finding a building prewired for speed. The market has just begun to grow, and Wolf says the providers are focusing on the lowest-hanging fruit in tech-heavy locales like the West Coast. He notes, however, that the providers are likely to expand to other urban—and even some suburban—areas during the next few years as demand for broadband services increases. Even so, if you need a home for remote employees, it may pay to add "broadband-enabled" to your list of housing requirements.

—Christopher Lindquist



## new products

DDS-1 through DDS-3 cartridges. Tecmar has increased the term of its warranty to three years and also offers free technical support for the product. The WangDAT 9400 lists for \$1,145. For more information call 303 682-3700 or visit [www.tecmar.com](http://www.tecmar.com).

### Bid Buy Phone

Online auctions and e-commerce sites are revolutionizing how companies buy and sell products. But what happens when you're away from a computer when that critical item is about to close?

**Bid.com International** has introduced several solutions to the problem for users of its

**Commerce Engine** products.

Now, Bid.com customers will be able to receive notifications and update bids via **Research in Motion** wireless communications devices. They can also call a special phone number to receive product information and place bids via voice recognition.

Pricing for Bid.com e-commerce solutions varies by application and can involve a one-time fee, monthly fees and profit-sharing arrangements. For more information, visit [www.bid.com](http://www.bid.com) or call 888 287-7467.





Flashcom's Chief Technology Officer – Michael Jones.  
"AT&T Business Network gave us a single-source,  
Web-based networking solution that easily keeps up  
with our company's rapid expansion."

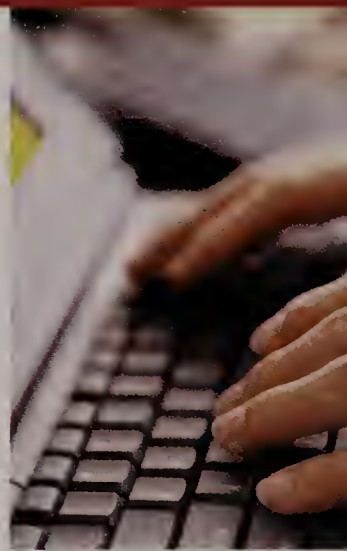


# Take me to the corner of Speed and Integration.

## Hurry, I'm on Internet time.

Flashcom, one of the nation's leading broadband service providers, wanted a more innovative and cost-effective communications network that adapts as their company expands. They also wanted to manage the solution in a Web environment.

**AT&T Business Network** provided Flashcom an integrated network solution consisting of a full range of data, IP, wireless, local, international and long distance services. All through **one contract, one monthly bill** and a **single point of contact** for customer care. And, AT&T Business Network allows Flashcom to order services, track maintenance requests and pay charges - **all online**. If your company wants simplicity and cost-effectiveness from a company that can grow with you, let AT&T Business Services take you there - **now**.



Business Services | 1 800 ATT-3199 | [www.att.com/business\\_services](http://www.att.com/business_services)





#### UNDER DEVELOPMENT distributed computing

## Waste Not, Want Not

**EVERY DAY, HUNDREDS** of millions of people turn on their computers—and then let them sit idle much of the time.

So says Adam L. Beberg, a 26-year-old computer scientist who is looking to put all of this wasted computing power to use. He wants to link underutilized PCs into distributed computing environments that can handle supercomputer-caliber tasks, such as weather forecasting or animating feature films. “The idea is to take computers that are sitting idle or wasting processing cycles on screen savers and turn them into a single supercomputer,” says Beberg.

The concept isn’t as exotic as it sounds. Now that most PCs are connected to the Internet—and ventures like Napster and Gnutella are linking computers via the Net for file sharing—getting people to run distributed computing software on their PCs in the background shouldn’t be difficult. In fact, the SETI@home project has already convinced more than 2 million computer users to join in a search for possible extraterrestrial radio signals by having their machines analyze data gathered by the Arecibo Observatory in Puerto Rico.

That’s not the only example, either.

Back in 1997, Distributed.net, an organization founded by Beberg, used distributed computing technology to crack a series of complex encryption keys. In a demonstration designed to prove the futility of U.S. government restrictions on the exportation of cryptographic software, three different 56-bit keys were consecutively unraveled in 250 days, 40 days and under 24 hours as more people joined the project. The export restrictions have since been relaxed.

Distributed.net, thanks to its members, now has the combined processing power of more than 160,000 266-MHz Pentium II PCs. But Beberg has bigger plans. He’s working on Cosm, a set of programming tools and protocols that will allow organizations to create their own distributed computing environments. “Companies such as pharmaceutical firms or movie producers will be able to hire people to participate in their projects,” he says. Beberg is developing the technology through Mithral Communications and Design, a Minneapolis-based company he founded in 1995.

Beberg’s efforts haven’t gone unnoticed. Several government and educational institutions, such as Argonne National Laboratory at the University of Chicago and the University of Southern California’s Information Sciences Institute, are now working on their own distributed computing projects. Meanwhile, Porivo Technologies, a startup in Research Triangle Park, N.C., is planning to open a distributed computing Web portal that will allow computer users to view and select projects they would like to participate in. “We’re following the ant colony analogy,” says Sam Kirby, Porivo cofounder and vice president of marketing. “We’re going to use millions of fairly unintelligent entities, working together to do very complex things.” —*John Edwards*

**Distributed.net has the combined processing power of more than 160,000 266MHz Pentium II PCs.**





With SAS<sup>®</sup> you'll push  
supplier costs down.  
And profits up.

SAS, SAS Institute Inc., and SAS Institute are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. All other marks are the trademarks of their respective owners. Copyright © 2000, SAS Institute Inc. All rights reserved. 35034US.0700

*How? By leveraging  
supplier relationships  
for bottom-line savings  
of up to 15% (or more).*

What are you buying from which suppliers — and at what risk? Do those purchases reflect your corporate goals, values and e-strategies? With the SAS solution for supplier relationship management, you'll see B2B relationships in a whole new light — one that's heavily weighted in your favor. And we've combined the expertise of Dun & Bradstreet to make our software even more powerful. So you can be even more profitable. A quick demo awaits you at [www.sas.com/leverage](http://www.sas.com/leverage)

phone: 800.727.0025  
E-mail: [cio@sas.com](mailto:cio@sas.com)  
[www.sas.com/leverage](http://www.sas.com/leverage)

*The Power to Know<sup>™</sup>*





# Opinion

## IN THIS SECTION

### Difference Engine

Andrew L. Shapiro . . . . . 182

### Reality Bytes

Megan Santosus . . . . . 186

### Platform

Kenneth Lengel . . . . . 190

### Sound Off

Martha Heller . . . . . 194

### From the Publisher

Gary Beach . . . . . 198

## Difference Engine

The Social Impact of Technology

# Too Close for Comfort

Tailoring information may seem like the best weapon against data smog, but beware: Personalization has a dark side

BY ANDREW L. SHAPIRO

**ANYONE WHO HAS** seen the classic 1967 film *The Graduate* will likely remember the scene when Dustin Hoffman's character, the hapless Benjamin, receives a single word of career advice from an older family friend. "Plastics," says the man, leaving Benjamin somewhat bewildered.

If the same film were made today, the business mantra for young Benjamin might well be "personalization."

Personalization is one of the hallmarks of the digital age. The Internet's interactivity and depth are allowing individuals to tailor their information intake—whether it's news, music, stock quotes, research or political information. Digital consumers are also getting the chance to customize their products and even



to steer social interactions in new ways, in so-called virtual communities. Personalization, in short, is giving us an unprecedented ability to control the way we experience the world.

The appeal of personalization clearly has not been lost on the dotcoms of the world. They've created a bevy of products with the prefix "my"—My AOL.com, My Yahoo, even MySAP.com. And their marketing slogans include such gems as Netscape's "The World According to You" and Microsoft's

ILLUSTRATION BY MONIKA MELNYCHUK





## Endless Possibilities. Younique Solutions.

Your challenge is to turn possibilities into profits. But your success depends on being able to exchange information with your customers — reliably, securely, safely. Who can make it happen? You can — when you bank on SAVVIS. You need an IP network that's always on, 24x7. And SAVVIS delivers, enabling you to launch new applications with complete confidence. In fact, 75 of the top 100 worldwide banks and 45 of the top 50 brokerage firms trust the SAVVIS network. So should you.

**Intelligent IP Networking for Dynamic Companies<sup>SM</sup>**



[www.savvis.net/reliable](http://www.savvis.net/reliable)

© 2000 SAVVIS Communications. All rights reserved.  
All trademarks property of their respective owners.



"Where do you want to go today?" But personalization is more than just a marketing fad. It's a concept that embodies the shift in power from institutions to individuals that the Net makes possible—a shift that is evident in everything from day trading to the Napster music-download craze to the use of e-mail by dissidents in Belgrade and Beijing.

There's much to like about personalization, it's true. It can help us deal with information overload, letting us select just the facts, opinions and experiences we want. But the trend could backfire and have unforeseen consequences—both for individuals and for society.

### When You're Alone

First, there is the problem of privacy. Much of the online collection of individual data happens through personalization, and it's often without the individual's consent. When we click here for this category of news or click there to customize that product, we give away revealing information about our consumer

## Once users wade through the stories that are pushed to their e-mail boxes, how will they have time for generalized news?

preferences. Once aggregated with demographic information—age, ZIP code, income—this data can be immensely valuable to marketers and advertisers. But it also means that profiles are being compiled on every one of us who takes advantage of personalization.

Second, there is the prospect of narrow-mindedness. Though specialization seems inevitable in a world of ever-expanding knowledge, excessive personalization threatens to make us less well-informed. Online services like Individual.com's NewsPages and New Technology's InfoBeat offer users detailed news stories in any of thousands of hyperspecialized categories. Once users wade through the stories that are pushed to their e-mail boxes, though, how will they have time for generalized news?

And what happens to all the stories that we probably should know about but that few of us would actually select: news about Alzheimer's disease or urban poverty or campaign finance reform? Optimists might say that consumers are smart enough to keep their horizons broad, yet a significant body of psychological research demonstrates that, when given the opportunity, individuals will routinely choose to avoid information that is challenging or unpleasant.

Third, there is the danger of social fragmentation. Communities—whether local or regional or national—thrive on shared information. Without it, or some other form of com-

mon experience, it is difficult for people to feel empathy for one another, and empathy is a precursor to a strong community. In today's world, shared information generally means shared media experience. For all their failings, mass media such as newspapers, radio and TV at least give us a common frame of reference; they provide us with source material for all those proverbial watercooler conversations on topics both trivial and profound.

With personalization, on the other hand, it's not hard to envision a world in which neighbors in real space have little to talk about because they inhabit such vastly different cyberspaces.

### Keeping a Balance

The solutions to these problems require informed decision making. Consumers need to know more about the power—and limits—of personalization, and information professionals have a key role to play.

On the privacy front, the stakes are clear. Companies need to give Web users real notice and choice regarding use of personal information. Otherwise, they'll alienate customers, glean none of the financial benefits of personalization and risk heavy regulation. (See also "Private Matters," *CIO*, June 1, 2000.)

How companies should handle the risks of narrow-mindedness and social fragmentation is less obvious.

Yet there are surely ways that companies can help consumers make more responsible decisions about how far to take personalization. For example, websites and other online services that let users customize their information intake can offer not just hyperspecialized topics but broad categories of common interest. They can inform users about the importance of a well-balanced information diet—not one that is all cyber-candy. And they can help them recognize the importance of shared information to community integrity. One way a company might do this is by posting not just a privacy policy but a personalization policy that explains the company's philosophy about the benefits and drawbacks of information specialization.

Of course, information professionals who are sympathetic to these values may nonetheless doubt whether their companies will agree. But the responsible thing for corporate leaders to do—and the counsel of information professionals may be key here—is to balance social and economic imperatives. Only then can we ensure that personalization is an asset—not a liability—to society. **CIO**

---

Do you think the world is getting too personal? Let us know at [difference@cio.com](mailto:difference@cio.com). Andrew L. Shapiro is the author of *The Control Revolution: How the Internet Is Putting Individuals in Charge and Changing the World We Know* (PublicAffairs/Century Foundation, 1999), the revised paperback edition of which was released in June.





## Endless Possibilities. **Y**ouunique Solutions.

Your business potential may be brilliant. But your success depends on how fast you can get to market. Who can make it happen? You can — with the help of SAVVIS. As easy and instantaneous as flipping a switch, you can create cost-effective customized IP networks on demand. Just go on-net with SAVVIS, and deploy private IP networks for your extranet, intranet or any application you choose. With your built-to-order private IP networks, there are no limits to what you can do.

**Intelligent IP Networking for Dynamic Companies<sup>SM</sup>**



[www.savvis.net/nolimits](http://www.savvis.net/nolimits)

© 2000 SAVVIS Communications. All rights reserved.  
All trademarks property of their respective owners.



# Opinion | Reality Bytes

A Cold Look at Hot Trends

## “A” Is Not for Advertising

Advertising belongs in schools as much as weapons, drugs and graffiti

BY MEGAN SANTOSUS

**ABOUT FOUR YEARS** ago, I took an adult education class at a local high school. While wandering aimlessly through dimly lit and surprisingly ill-kept hallways, I came across a sight that I found truly appalling. It wasn't graffiti, cracked linoleum or a surly teenager that stopped me in my tracks; it was a full-color, poster-size advertisement displayed prominently outside the guidance counselor's office. Above the larger-than-life bag of candy pictured on the ad was the message: "M&Ms...better than straight As." A dubious proposition at best but in an institution devoted to learning, downright subversive.

At the time, my high-school memories were a dozen years behind me. The thought of an ad (other than a recruiting poster for the Marines) anywhere in a school, let alone in the vicinity of the guidance counselor's office, was a novel and disturbing one. Since then, I've discovered that the M&Ms ad wasn't an aberration; it was the start of what is now a full-blown trend careering down a slippery slope, helped along in no small part by the migration of computers into classrooms.

Perhaps it was only a natural evolution that high schools would join their collegiate brethren in signing deals with fast



food companies, soft drink makers and sporting goods manufacturers. Open up a Taco Bell outlet in the cafeteria, populate the hallways with Coke machines and adorn team uniforms with the Nike swoosh, and schools can reap a nice wind-fall without annoying the taxpayers. For their part, companies get one of the most coveted prizes in advertising: a captive audience of impressionable consumers with money to spend.

However, natural capitalistic tendency or not, advertising in schools is a bad idea on every level. (Companies that see academia as fertile advertising ground may take exception to this view, which is understandable, although, I believe, ultimately short-sighted.) The big, head-scratching question is why this obvious conclusion doesn't resonate with educators and taxpayers. Shouldn't school be the one place where teenagers are protected from the advertisers urging them, as the saying goes, to buy things they don't need with money they

ILLUSTRATION BY OCTAVIO DIAZ



# WE



don't sell  
software.

**WE SELL ADVANTAGE.**

The advantage of BEING unique

The advantage of TREATING customers uniquely

The advantage of real eBusiness AGILITY

*eCRM*

*eBusiness Infrastructure*

*eProcurement*

**Accelerating Your Advantage™**

[www.REMEDY.com/offer/adCIO](http://www.REMEDY.com/offer/adCIO)

1-888-294-5757

 **Remedy®**  
Corporation



don't have to impress people they don't know?

Schools should not be in the business of providing a venue for advertisers to promote their wares. They are in the business (or they should be) of preparing students to deal with the rigors of a 21st century economy where knowledge is paramount and skills must be adaptable. In far too many cases, schools are doing a fine job providing advertisers with receptive consumers while botching their real purpose: educating kids so that they won't need remedial training to land an entry-level position. Anything that doesn't serve that singular purpose is a distraction that should be kept (much like drug dealers) a mandated distance from school property.

## Natural capitalistic tendency or not, advertising in schools is a bad idea on every level.

Of course, advertising proponents insist that more good than harm is being done. With money raised from exclusive contracts, schools now have the wherewithal to provide resources for themselves. (I'd personally like to see a correlation between advertising revenue and higher test scores.) Plus, with fast food and soda readily available down the hall, students no longer have to rush to the neighborhood drive-thru during their 25-minute lunch period, thereby reducing the incidence of noontime traffic accidents.

Believe it or not, I've heard a school official use just this argument; I suppose administrators deem banning the use of private cars by students too radical, perhaps seeing it as interfering with their God-given right to drive dangerously. I've also heard a school principal justify his decision to sign a deal with a fast-food company by asserting that students were going to eat the stuff anyway, so why not have the school provide it onsite and make some money in the process? -

### The Internet Connection

Perhaps the favorite argument for in-school advertising circles around technology and how to get it. As school districts clamor for expensive computer equipment they don't know how to use and politicians push for Internet connections in every classroom, companies are jumping in to provide hardware and software free of charge to fiscally challenged schools. Businesses like ZapMe of San Ramon, Calif., will provide new computers, the latest software, a rooftop satellite, networking equipment and even support, upgrades and training, all gratis. To round out their donation, ZapMe provides "educational content" in the form of 13,000 websites—selected by editors—cached on

Internet servers installed in schools. Of course, there's a catch: Schools have to run ads in the corner of the computer screens.

And there's the problem. While Junior struggles with his essay on the conflict of good and evil in Shakespeare's *Hamlet* (which, incidentally, he didn't read), what would prevent a company like Amazon.com from running an ad offering \$1 off the DVD movie version of the play starring Mel Gibson? (While I admit to liking the movie, let's not forget that the point is to read the text first.) And an even bigger issue arises: Who do we want providing content for students? Educators or marketers?

Outfits like ZapMe are picking up where Chris Whittle's Channel One left off. In 1990, the entrepreneurial Whittle launched a company that offered schools news programs via television. Again, the catch was that commercials would be broadcast along with the news. Not surprisingly, Channel One was bashed by many educators who ridiculed the idea of TV in the classroom. But while ZapMe

and companies like it have endured their share of criticism, adding a computer and an Internet to the equation lends an air of legitimacy to their approach. After all, it's not an Idiot Box they are proffering but a tried-and-true educational tool!

Advertising is advertising, it's not education, and it shouldn't be associated with it. On billboards, in magazines, during the Super Bowl—that's where advertising belongs and where it should stay. It's ironic, but by subjecting students to a deluge of ads in what should be an intellectual sanctuary, advertisers are ultimately doing themselves a disservice. With each ad a consumer sees, every subsequent ad becomes less effective. As attention spans shrink ever smaller, advertisers find themselves hard-pressed to come up with messages that shock, provoke, entertain or otherwise make consumers take note. By targeting ads to schoolkids—most of whom gladly welcome any distraction from trigonometry and will click on every banner ad that flashes across their screen—advertisers will ultimately degrade the power of their own medium.

But the real loser in this is society. Already, grade-schoolers are used as fund-raisers for their schools, selling everything from wrapping paper to candy to generate revenues for extracurricular activities. By permitting advertisers to go after schoolkids on school property to raise money for schools, we're letting children be used as revenue-generating pawns. Is this what we want in our public education system?

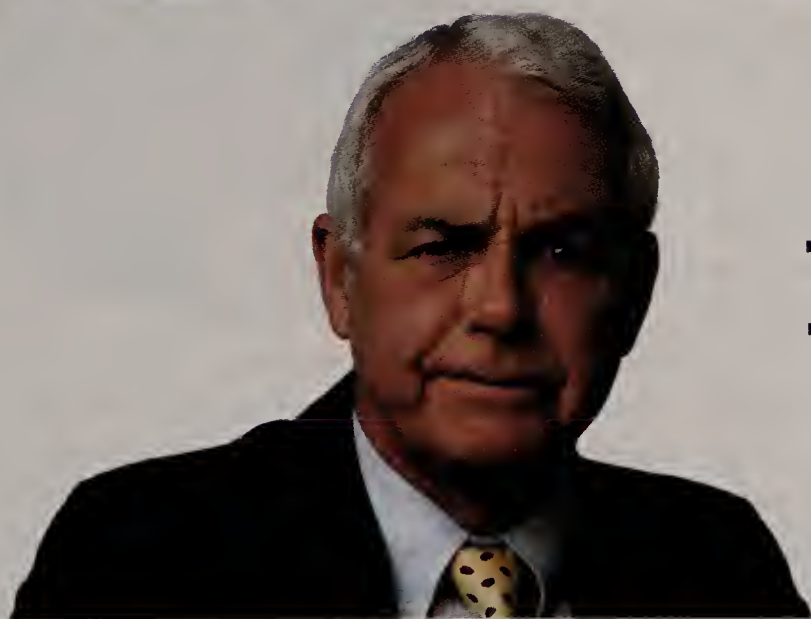
Better than As, eh? I don't think so. **CIO**

Are schools sacrificing education for the sake of a few bucks? Let Senior Editor Megan Santosus know your thoughts at [santosus@cio.com](mailto:santosus@cio.com).





**A BETTER  
SERVER.  
A BETTER  
PLACE  
TO KEEP IT.  
THE BEST  
PRICE  
OUT THERE.**



**FINALLY,  
TECHNOLOGY  
THE CEO CAN  
UNDERSTAND.**

The ValueWeb™ dedicated server. Starting at \$295 a month including bandwidth, for a limited time only.

It's today's most advanced server setup. It's also simple economics. You get a scalable, high-performance rack server that can handle 35 million hits a day. You keep it at our ultra-secure Data Center, located directly on our own national ATM network and connected to the Internet via the multiple redundant OC-3 and DS3 links of AT&T, Sprint and e.spire. Yet you pay just \$295 a month – a fraction of what you'd pay for the same performance and security on-site. You also get your first month free. Making this introductory offer a true no-brainer. Even for you know who.

**ValueWeb™**

Powerful tools make powerful people.™

Free first month when you sign up before Sept. 30, 2000. Call 1-800-346-1319 and mention offer 1463 or visit [www.valuweb.com/1463](http://www.valuweb.com/1463). Trust the leader in shared hosting with plans starting at \$14.95 a month.

ValueWeb is a trademark of FloridaNet, Inc. All other product names are trademarks of their respective owners. ©2000 FloridaNet, Inc. All rights reserved.





# B2B: Back to Basics

BY KENNETH LENGEL

**HAVE YOU EVER** looked in a medical journal or encyclopedia and begun to wonder how many of the various ailments you might have? I believe that IT managers can suffer from the same type of hypochondria when it comes to improving the processes in their organizations.

As we read through the latest IT magazines, websites and white papers, we begin to look to the latest acronyms for answers to our problems: ERP, CRM, KM. The list goes on. When I see deficiencies in my current infrastructure, I am tempted to believe I am suffering from problems I can resolve by implementing some new technique, management fad or killer app. But I know that's not true. So when I start to feel that way, I take a look at a different kind of B2B. I go back to basics, and I evaluate my circumstances based on four premises:

**First: Constantly reevaluate existing resources.** With deadlines always looming, it's easy to forget about the 10 computers we purchased to complete the last project, the new training Team B received and the existing skill sets of our present staff. Keeping track of this information may be the last thing you



remember to do when finishing a project, but it has saved me many hours of consulting fees and has helped keep projects within time and budgetary constraints. I create a simple inventory of my equipment, software licenses and so on, in a spreadsheet for use in budgeting for improvements and reengineering needs. Then I take a step back and reexamine all my current staff. I prepare a list of all their talents, skill sets and areas of expertise and keep it in a handy place for constant review and maintenance. Compiling this information gives me the ability to determine who can assist in intradepartmental projects and who can fill a gap when needs and resources are at issue.

**Second: Think big, build smaller.** The best concepts begin on a strong foundation. It is vital to the success of any large project to examine how the project can be completed in stages. Why not consider your present infrastructure as one that needs only

ILLUSTRATION BY BILL SCHWARTZ



| Style               |
|---------------------|
| Faster              |
| More affordable     |
| Simpler             |
| On a silver platter |

**The only way to improve Lawson apps  
is to improve the way you get them.**

The days of building and supporting your own enterprise software infrastructure are gone. Now you can have the best applications implemented easier and more affordably than you ever thought possible—beginning with the best e-business apps from Lawson Software. Lawson provides powerful and self-evident business applications



to large and mid-market corporations. We provide your Lawson solution and take total responsibility for every aspect from implementation to support—all for a flat monthly fee. For more information on USi, call 1.877.459.7253 or visit [www.usi.net/silverplatter](http://www.usi.net/silverplatter).



**Making software simple.™**

©2000 USinternetworking Inc



small transitions for improvement rather than attempting large projects that historically have high failure rates? For example, 65 percent of all CRM projects are considered failures in meeting their objectives. In some cases, you may be better off not implementing a CRM project but finding the places where the concepts of CRM may improve your processes. Here's where I go back to basics: I complete a gap analysis to see where I am and where I want to be. Sometimes the results shock me. The analysis can help me recognize if my foundation is the area that requires change or if only some small processes need improvement.

**Third: Maintain your intellectual capital.** Company intranets are commonplace in most IT organizations, yet information is constantly out-of-date and hard to find. Networks have become a repository for disjointed, unorganized documents, spreadsheets, project plans, e-mails and who knows what else. Finding

## Often overlooked groups will benefit greatly by simply having access to information.

the current business requirement is like finding a needle in a haystack. In order to get back to basics, IT managers must begin to organize, in small ways, the massive volumes of information they create and accumulate each day. In my company, we have begun to compile the seemingly endless streams of documentation on the various programs developed in the past 10 years. We have included the location of business requirements, test plans, system documentation and help files to create a database that designates the location to keep track of our intellectual capital. In addition, we have created what we call system expert presentations. These presentations were initially created to train our team on new applications, but we are presently preparing them so that other members of our technology group can take advantage of this wealth of knowledge.

**Fourth: Involve all necessary teams in product development.** When using a standardized software development life cycle, project managers need to include all teams throughout the entire process. That may seem unnecessary, but the discussion and information conveyed by each participant during these conversations offers them a sense of ownership. Often overlooked groups will benefit greatly by simply having access to this information. For example, network services can ensure the impact on the network is minimal. Training groups can create accurate materials for customers. QA analysts can develop and maintain test plans that help ensure the product

quality. Meeting discussion points should include the following: common terminology, definitions of complex terms or processes, changes to existing and dependent applications. One way we have improved our project development is by sharing this valued information. We maintain spreadsheets to describe the changes to the applications for the upcoming development cycle. Project plans and statements of work and business requirements are available to all.

Another added improvement in my company has been to invite all technology teams to alpha tests of new, enhanced or redeveloped applications. These meetings provide every team with valuable insight into the program and the information needed to complete their assignments.

For example, in my previous position with another company, we were challenged by the need to convert information from one database system over to our present system. The initial analysis from the programmers suggested that the

conversion effort would require many long hours and late nights to complete in the scheduled time frame. During a meeting focused on how to attack this major effort, a data-entry specialist pointed out that we had all the paper records for these entries. Another member of the project then suggested that we calculate how long it would take

to enter the data into our system manually. The calculation was roughly equal to the time needed by a programmer for conversion. In order to save costs, we decided to enter the data manually. The knowledge of the data-entry specialist proved vital in saving the company time and money. From that experience I learned that the key to scheduling meetings is to invite anyone who might have knowledge needed to make the project a success.

Infrastructure changes are never easy. New project managers, loss of unrecorded intellectual capital and the high employee turnover rate for IT groups make these changes seem insurmountable. When I am tempted to reevaluate change, I remind myself to return to the basics. That way, I find it easier to see the holes in the present processes and make the appropriate decisions needed for improvement. Management fads are good in small doses, but the real nugget benefit of these proposed solutions is the answers they provide to common problems we all face as IT managers.

So the next time you see an article with the title "B2B," it may refer to business-to-business, but now it can also serve as a reminder to go back to basics when you attempt to solve problems in your business infrastructure. **CIO**

Looking for a platform for your ideas? Let us know at [platform@cio.com](mailto:platform@cio.com). Ken Lengel is the director of system integration at tax preparation service Jackson Hewitt, a subsidiary of Cendant Corp.





e-business

It takes a powerful  
**database**  
to analyze and act on  
**Web data**  
as fast as customers  
**can click.**  
That's the software  
**IBM makes.**

**IBM**

DB2® Universal Database™ integrates business intelligence capabilities others leave out, helping you consolidate online customer data with everything else that's going on in your business. To see how DB2 helps make all your systems smarter, visit [www.ibm.com/software/soul/smarter](http://www.ibm.com/software/soul/smarter)

Software is the soul of e-business.™



# Opinion | Sound Off

Taking Sides on Critical Issues

## More H1-B Visas; Fewer Problems?

BY MARTHA HELLER

**POLITICIANS AND** high-tech lobbyists may be quibbling over legislative details, but nearly everyone agrees that this country is in desperate need of more foreign-born IS workers.

The current federal allowance of 115,000 H1-B visas, the high-tech industry claims, barely puts a dent in the IT labor shortage. Largely as a result of efforts by lobbyists like Harris Miller, president of the Information Technology Association of America (ITAA), Congress is considering two rival H1-B visa bills: one to raise the cap to 200,000 and the other to remove the cap altogether.

"With over 850,000 IT jobs expected to go unfilled this year, Congress must act quickly to raise the number of available H1-B visas," argues Miller. "Increasing the availability of highly skilled [foreign-born] workers to American technology companies is one of the most positive steps the United States can take this year toward continuing the robust growth of the new economy."

Shelley Morrisette, senior vice president and director of research at Darwin Partners, an IT workforce solutions company, couldn't disagree more. "Changing immigration policy

will not work," argues Morrisette. "Technology is constantly changing and accelerating, creating obsolete IS workers daily. The real issue facing the high-tech industry is how to effectively and continually retrain and use obsolete workers."

According to Morrisette, the whole staffing crisis—and the notion that throwing more visas at the problem will solve it—is a red herring launched by the high-tech industry to put downward pressure on IT salaries. More bodies may increase the pool of candidates, and many of those bodies may come cheap, says Morrisette, but CIOs who chase down H1-B visa workers are wasting their time. Their energies would be better spent retooling their human resource strategies for the new economy.

An obsolete worker is an obsolete worker, and 10 are no better than one. Regardless of the number of H1-B visas available, says Morrisette, companies that implement effective



ILLUSTRATION BY ANASTASIA VASILAKIS





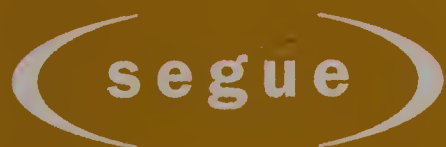
**Access denied.**

Insufficient resources. Stock market  
unavailable this afternoon. Please  
try tomorrow.

OK

Business would never let it happen. Neither should e-business.

[www.seguel.com](http://www.seguel.com) the e-business reliability experts





retraining programs, pay a premium for highly skilled talent and ignore the doomsday laments of staffing crisis propagandists will successfully manage their own staffing situation. Companies that expect a larger and cheaper labor pool to solve their staffing woes for them will be the first to go.

Will more H1-B visas solve your staffing problems? Here's a sampling of the comments and concerns that Senior Web Editor Martha Heller received. You can respond to her by e-mail at [mheller@cio.com](mailto:mheller@cio.com) or respond to this and other topics on CIO.com via [comment.cio.com](http://comment.cio.com).

NOT TO PANIC. A FEW YEARS AGO ALL OF THE I.T. HIGH-tech jobs were going to India and the Philippines. Besides the assumed quality and cheap labor, the fact that they speak English was a significant factor. Because these workers were remote and had a lack of understanding of the "American way," even with e-mail and the Internet, this threat wasn't significant.

## DO WE NEED MORE H1-B VISAS?

Want to sound off on this or other topics? Join the ongoing debates at [comment.cio.com](http://comment.cio.com).

Now, the threat is that they will come here and take away the IT jobs that they could not take away remotely. I think that those who are truly competent and, more significantly, who are capable of working in the United States as individuals, and yet as part of a team, will make a contribution to our growth and to the improvement of our economy.

**Charles J. Liszcz**

*CIO & CTO*

*Enterprise Services Co.*

[cliszcz@esc-hdq.com](mailto:cliszcz@esc-hdq.com)

THE ISSUE IS NOT ONLY THE NUMBER OF H1-B VISAS THAT are being granted but the amount of time involved in processing them. For example, when an organization is seeking a resource, the initial thinking is to hire local. Hiring local saves costs (moving costs) and allows the company to effectively check references. If a resource isn't found domestically to fulfill the need and a foreign applicant is identified, it still takes a number of weeks (I've heard four to eight) to get the visa processed. In our business, this time is an eternity.

**Alan Tragarz**

*Director, e-Business Solutions*

*Silicon Space Inc.*

[alan@siliconspace.com](mailto:alan@siliconspace.com)

IT'S AN ISSUE THAT NEEDS TO BE HANDLED WITH AN OPEN mind. What's so wrong with H1-B guys getting \$65,000 to \$115,000 salaries? They are highly qualified workers in a hot market that constantly keeps creating demand for skilled workers. When employers are ready to pay that kind of money, why not allow it?

The issue surrounding H1-B visas is not how much people get paid but how many people are needed to fill these positions—800,000 plus for this year. I think offering green cards to skilled workers is a great idea and eliminates the get-out-after-six-years policy.

**Shyam Radhakrishnan**

*ERP Administrator*

*StarMedia Network*

[shyam@starmedia.net](mailto:shyam@starmedia.net)

I AGREE WITH MOST OF SHELLEY MORRISETTE'S COMMENTS. One exception, though, is the retraining of obsolete workers. It has been my experience that they do not want to be retrained. They have become complacent in what they can do and want to do.

We are also unwilling to pay the high premiums for highly skilled talent. I also feel that there needs to be a qualification of "highly skilled." Most of the resources who claim to be highly skilled talent, foreign nationals or otherwise, do not always turn out to have the skills they claim to have. I have also found that foreign nationals do not tend to be delivery-oriented as much as wanting to improve their skill levels. This is key to being highly competitive in today's business model of quick-to-market.

Staffing for information technology should evolve to a core competent group that has information technology experience, is business-oriented and can keep abreast of the advances in technologies.

**Frank Williams**

*Manager of Advance Technologies & Web Development*

*Thomas & Betts*

[frank\\_williams@tnb.com](mailto:frank_williams@tnb.com)

I WOULD LIKE TO SEE A SIGNIFICANT INCREASE IN THE POOL of foreign workers. We have successfully used foreign workers in the past. This is one of several efforts required to meet the shortage of skills in the marketplace. However, our colleges and universities need to be more effective in delivering graduates with the right skills. All companies, though, need to offer retraining to their workers.

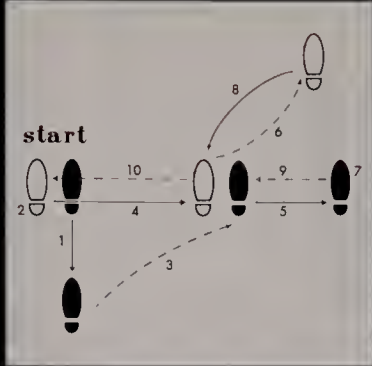
**David Baumgart**

*IS Director*

*John Morrell & Co.*

[dbaumgart@johnmorrell.com](mailto:dbaumgart@johnmorrell.com)





Diagrams work.

But, face it,  
reality has a pulse.

To be mastered, skills have to be experienced. That's why we created vLab<sup>®</sup> technology — a skills-based training environment that includes a real network complete with real problems. So, with vLab's remote on-line learning, you're taught real skills, real solutions on real gear — and get all your moves down cold. For more information about what Mentor Technologies' vLab system can do for you, check our website at [mentortech.com](http://mentortech.com). **Mentor Technologies. Real Learning for a Virtual World.**

**vlab<sup>®</sup>**  
from  
mentor technologies



# IT's Dirty Secret

**IT'S ANOTHER RAINY** weekend in New England. Perfect weather for cleaning the basement. My annual rummage through our family's rubbish unearthed five used personal computers, which—to my amazement—still worked.

I called our school's technology coordinator to donate my digital relics only to be greeted by this reply, "I am sorry, Mr. Beach, our school policy accepts only working condition Pentium II class or more powerful machines." Excuse me!

Resigned to performing a burial in the local landfill, I loaded my former digital comrades into my car. I was not feeling good about this. And I felt worse when, on entering the landfill, I read a freshly painted sign indicating that my computers were not welcome there either. What's going on?

I researched the issue of electronics waste and discovered that our industry is not as clean as we would like to think it is. Blame Moore's Law. You know, the one that states that the processing power of a personal computer doubles every 18 months. More than 100 million discarded computers are the residual byproducts of Moore's Law, which condemns computing devices like personal computers, monitors, keyboards, PDAs and printers to life cycles that barely reach two years.

There are three primary parts in a computer. The box that houses the microprocessor, the power supply and the hard drive; the CRT monitor; and the keyboard and mouse input devices.

The good news is virtually the entire computer can be recycled. The bad news is most corporate and personal users of computers are either naive about the need to recycle them or just plain lazy.



Gary J. Beach

The primary reason my local landfill would not accept my computers was the CRT monitor. According to the U.S. Environmental Protection Agency, the glass in CRT monitors contains lead that shields computer users from radioactivity needed to produce images on our monitors. Improper disposal of CRTs could cause lead contamination in water supplies.

On the other hand, recoverable materials from an old personal computer is a cornucopia of precious materials such as gold, silver, copper, aluminum and palladium that can be reused to make new computers or sold to metal exchanges.

How many abandoned personal computers are littering the closets and warehouses of your corporation? *CIO* research estimates that the average *CIO* reader works for a company that replaces approximately 2,700 personal computers a year. Where are all these computers going?

My local library has an interesting policy on overdue books. During January, all overdue books can be returned with no late fee charged. Could that program show our industry the way to solve our problem of electronics devices waste?

The Environmental Protection Agency claims the most effective electronic disposal programs are local, one-day events where communities tout special drop off points for computers.

Consider this: What if every *CIO* reader wrote his or her congressional representative (log on to [www.house.gov](http://www.house.gov)) and suggested making January "National Technology Recycling Month?" Can you imagine the impact recycling programs organized by CIOs will have on the tens of thousands of communities across America that will host them?

We are the world's most prolific users of technology. We must work together to recycle the tools of our trade for future generations. Include me on your e-mail to your congressman. Let's get to work fixing our industry's dirty little secret.



# We Heard You.



You asked **CIO** to help educate senior management on the business value of technology.  
**We heard you. And we're pleased to announce DARWIN.**

DARWIN is the first magazine, written, edited and calibrated for business executives. Every issue demystifies technology for non-technology executives and helps them understand, identify and support technology options to achieve your organizational goals.

DARWIN covers all the technologies executives need to know, not just the Internet. From application software to ASPs, from encryption to ERP, hardware to hosting,

VPNs to vendor relations — everything it takes to use technology to solve business challenges.

DARWIN is **FREE** to qualified non-technology executives. Tell your team to apply for a **Free Subscription** at [www.darwinmag.com/subscribe](http://www.darwinmag.com/subscribe)





# The Magazine for Information Executives

## CIO SALES OFFICES

**President & CEO** Joseph L. Levy • 508 935-4601

**Publisher** Gary J. Beach • 508 935-4202

**Executive VP Sales/Custom Publishing**  
Ellen Romanow • 508 935-4796

**Sales Operations Associate** Kim Harris

### East Coast

**Senior VP Sales/East**

Michael J. Masters • 973 244-5500, ext. 21

**VP/Business Development**

Frank S. Genovese • 973 244-5500, ext. 19

**Regional Manager/Consumer Ad Sales**

Pauline Smith • 508 988-6821

**Senior Regional Managers/Advertising Sales**

Eileen P. Lobaugh • 973 244-5500, ext. 18

Kathy Powers • 973 244-5500, ext. 14

**District Manager**

Ellie Schwab • 973 244-5500, ext. 16

**Senior Sales Associates**

Joan Bonadeo • 973 244-5500, ext. 17

**Office Manager**

Marlene Levis • 973 244-5500, ext. 15

**Advertising Sales Associate**

Angela Fung • 973 244-5500, Fax 973 227-1565

**Administrative Assistant** Sharon Harrison

### New England

**Senior Regional Manager/Advertising Sales**

Len Ganz • 508 935-4039

**Account Executive**

Dawn Cora • 508 935-4092, Fax 508 872-0618

### Mid-Atlantic

**Regional Manager/Advertising Sales**

Louise Cupelli

**Sales Assistant**

Vivek Parmar • 215 627-8114, Fax 215 627-8224

### South Central

**Regional Director/Advertising Sales**

Robert E. Sawdon • 512 306-9801, Fax 512 306-9805

### North Central

**Senior Regional Manager/Advertising Sales**

Keith H. Kenner

**Senior Sales Associate**

Anne Swartz • 847 441-5005, Fax 847 441-5150

### West Coast

**Senior Regional Managers/Advertising Sales**

James Barrett • 415 693-1995

Paula J. Connor • 415 693-5634

**Senior Account Executive**

Lucia Bravo • 415 693-5583

**Advertising Sales Associate**

Sarajane Robinson-Retondo  
415 693-1993, Fax 415 398-4649

## Southern California

**Senior Regional Manager/Advertising Sales**

Nancy A. Coy

**Account Executive**

Chris Bramel

**Senior Sales Associate**

Janis Wikander • 949 475-5579, Fax 949 475-5583

## LIST SERVICES

**List Services Director**

Kathryn A.W. Grayson • 508 935-4072

**List Services Account Executive**

Stephanie Roy • 508 935-4151

**List Services Coordinator**

Kim Cormican • 508 935-4152

## ONLINE SERVICES

**VP/Online Sales** Lisa Brown • 508 935-4470

**Online Account Executive**

Michael McPhee • 508 935-4611

## CUSTOM PUBLISHING

**Director** Mary Gregory

**Senior Project Manager** Nancy O'Connell

**Project Managers** Lisa Chaffin, Sally Ellison

**Senior Production Editor** Chris Brown

## REPRINT SERVICES

**RMS** 717 399-1900, ext. 131; e-mail

jeffm@rmsreprints.com

For further sales information, visit

[www.cio.com/marketing/salesoffices.html](http://www.cio.com/marketing/salesoffices.html).

CIO is published in the United States as well as in

### Australia, CIO Australia

P.O. Box 295, St. Leonards, NSW 2065, Australia

61-2-9439-5133; [www.idg.com.au](http://www.idg.com.au)

### Canada, CIO Canada (monthly)

CIO Enterprise Canada (biweekly)

Laurentian Technomedia Inc., 55 Town Centre Ct.

Suite 302, Scarborough, M1P 4X4, Ontario, Canada

416-290-0240; [www.lti.on.ca/cio](http://www.lti.on.ca/cio)

### China, CEO&CIO China

China Computerworld Publishing

Building 3, 4th Floor

16 Cuiweizhongli, Wanshou Rd.

Beijing 10036, China

8610-6825-9416; [www.ceocio.com.cn](http://www.ceocio.com.cn)

### India, CIO India

Technology Media Group Pvt. Ltd.

3540 HAL 2nd Stage

Indiranagar, Bangalore, India 560 038

91-80-521-0309/12

### Japan, CIO Japan

3-4-5 Hongo Bunkyo-ku

Tokyo 113-0033 Japan

03-5800-2931; [www.idg.co.jp](http://www.idg.co.jp)

### Korea, CIO Korea

39, Dangsang-Dong 1-Ga, Youngdeungpo-Gu

Seoul, 150-041, Korea

82-2-632-7561; [www.cio.seoul.kr](http://www.cio.seoul.kr)

### New Zealand, CIO New Zealand

P.O. Box 6813, Wellesley St.

Auckland 1036, New Zealand

64-9-377-9902; [www.idg.co.nz](http://www.idg.co.nz)

### Singapore, CIO Singapore

IDG Communications (s) Pte Ltd.

80 Marine Parade Road, #17-01A Parkway Parade

Singapore 449269

(65) 345-8383; [www.lti.on.ca/cio](http://www.lti.on.ca/cio)

IDG is the world's leading IT media, research and exposition company. Founded in 1964, IDG had 1999 revenues of \$2.56 billion and has more than 12,000 employees worldwide. IDG offers the widest range of media options, which reach 90 million IT buyers in 80 countries representing 95 percent of worldwide IT spending. IDG's diverse product and services portfolio spans six key areas including print publishing, online publishing, expositions and conferences, market research, education and training, and global marketing services. More than 90 million people read one or more of IDG's 290 magazines and newspapers, including IDG's leading global brands—*Computerworld*, *PC World*, *Network World*, *Macworld*, *CIO* and the *Channel World* family of publications. IDG Books Worldwide is the fastest-growing computer book publisher in the world, with more than 700 titles in 38 languages. The "...For Dummies" series alone has more than 75 million copies in print. IDG offers online users the largest network of technology-specific websites around the world through IDG.net ([www.idg.net](http://www.idg.net)), which comprises more than 250 targeted websites in 55 countries worldwide. International Data Corporation (IDC) is the world's leading provider of information technology data, analysis and consulting, with research centers in 42 countries and more than 575 research analysts worldwide. IDG World Expo is a leading producer of more than 168 globally branded conferences and expositions in 35 countries including E3 (Electronic Entertainment Expo), Macworld Expo, ComNet, Windows World Expo, ICE (Internet Commerce Expo), Agenda, DEMO and Spotlight. IDG's training subsidiary, ExecuTrain, is the world's largest computer training company, with more than 250 locations worldwide and 785 training courses. IDG Marketing Services helps industry-leading IT companies build international brand recognition by developing globally integrated marketing programs via IDG's print, online and exposition products worldwide. Further information about the company can be found at [www.idg.com](http://www.idg.com).



Conference: September 6-8, 2000  
Expo: September 7-8, 2000

Jacob K. Javits Convention Center  
New York City

# Windows<sup>®</sup>

## 2000 Conference & Expo

**Real World Answers  
for your Enterprise**

- Experts
- Exhibits
- Experience
- Education

**No other trade show  
brings together the entire Windows  
marketplace on such a high level!**



2000



Owned and managed by:

**IDG**  
WORLD EXPO

© 2000 IDG World Expo. All rights reserved. All other trademarks contained herein are the property of the respective owners.

For more information on exhibiting or attending, visit us online at:

**[www.windows2000expo.com](http://www.windows2000expo.com)**  
or call **1-800-560-7612**

**Platinum Sponsors:**

**CITRIX**  
Now everything computes.

**CommVault**  
Systems

**UNISYS**



**WYSE**

**Gold Sponsors:**

**Attachmate**

**NOVA**  
CIO-2



# Board of Influence

There isn't a single CIO on the editorial staff of *CIO*, and we don't employ any high-priced IT or business consultants. Nearly all of the ideas and articles we develop come from knowing and interacting with our readers. Our mission is to get inside their heads to learn what they need to know. Some of these readers have let us spend a lot of time in their heads by agreeing to serve on our Editorial Advisory Board. We thank them for their generosity and insight into their IT worlds.

—The Editors

## Editorial Advisers

### **DOUG BARKER**

VP and CIO, The Nature Conservancy  
Arlington, Va.

### **ROBERT BARRETT**

VP of IT, PRI Automation  
Billerica, Mass.

### **WAYNE D. BENNETT**

Partner, Bingham Dana  
Boston

### **BRIAN BERTLIN**

VP & CIO, Morrison Knudsen Corp.  
Boise, Idaho

### **JOHN B.W. CROSS**

Executive VP, AppNet  
Bethesda, Md.

### **THOMAS H. DAVENPORT**

Director, Andersen Consulting Institute  
for Strategic Change  
Boston

### **MICHAEL EARL**

Professor of Information Management  
and Deputy Principal  
London Business School  
London

### **DAVID V. EVANS**

Senior VP and CIO, J.C. Penney Co.  
Plano, Texas

### **JOHN GLASER**

VP and CIO  
Partners HealthCare System  
Boston

### **LEONARD G. GOLDSTEIN**

CIO, IntraLinks  
New York City

### **JERRY GREGOIRE**

Former CIO, Dell Computer Corp.  
Round Rock, Texas

### **KEN HARRIS**

Senior VP and CIO, The Gap  
San Bruno, Calif.

### **SCOTT HEINTZEMAN**

VP of Knowledge Technologies  
Carlson Hospitality Corp.  
Minneapolis

### **CHRIS HOENIG**

President and CEO, Exolve  
Washington, D.C.

### **C. LEE JONES**

President, AmericasDoctor.com  
Abbott Park, Ill.

### **SUSAN S. KOZIK**

CIO and VP of Corporate Centers  
Lucent Technologies  
Murray Hill, N.J.

### **CHUCK LYBROOK**

Executive Director, The Information  
Management Forum  
Atlanta

### **BERNARD (BUD) MATHAISEL**

Corporate VP and CIO  
Solectron Corp.  
Milpitas, Calif.

### **ALVIN PESACHOWITZ**

CIO, U.S. EPA  
Washington, D.C.

### **FRANK POLLARD**

Senior VP and CIO  
Allstate Insurance Co.  
Northbrook, Ill.

### **LARAINÉ RODGERS**

VP, Emerald Solutions  
Phoenix

### **HARVEY SHREDNICK**

Professor and Director, MBA/MSIM  
Dual Degree Program  
Arizona State Univ.  
Tempe, Ariz.

### **PETER SOLVIK**

Senior VP and CIO, Cisco Systems  
San Jose, Calif.

### **RICHARD W. SWANBORG JR.**

President, ICEX  
Boston

### **JAMES F. SUTTER**

Senior Partner  
The Peer Consulting Group  
Seal Beach, Calif.

### **ARTHUR G. TISI**

Former CIO,  
Metropolitan Museum of Art;  
Former CIO, Circline.com  
New York City

### **PATRICIA WALLINGTON**

President, CIO Associates  
University Park, Fla.

### **JOYCE WRENN**

Principal  
J.M. Wrenn LLC  
Omaha, Neb.

### **JUSTIN YAROS**

Senior VP and CIO  
Twentieth Century Fox  
Beverly Hills, Calif.



## Reporter Dispatch

# Manhattan Dreams

I met IT executive Arthur Tisi on a bright Manhattan morning; the kind of day that makes taxi horns sound like seagulls and the pavement feel like hard, white sand. He approached me like an old friend, arms outstretched, grinning ear to ear.

We had breakfast that day, then lunch the next, and after a full day together later that month he invited me out for drinks. He sent me a "top secret" copy of a record he'd cut with some friends. He called me at home to whine about the Yankees. He introduced me to his wife. Art and I had become buds.

Then on a rainy morning, he woke me with a frantic phone

call. He had read the first draft of a story I was writing about his transition from CIO of The Metropolitan Museum of Art to CTO at Circline, and he was very concerned (see "Start Me Up," Page 76).

Tisi: "Matt, it's about the story."

Me: "Wait, Arthur, is something inaccurate?"

Tisi: "No, no, no. It's just...it's just that I've decided to make a big change."

Me: "So? What do you think?"

Tisi: "So...I think I'm going to start my own company."

Tisi gave his notice two days later, determined to start his own company and do things the way he thought they should be done. It's a project he has dreamed of for nearly 10 years, but he says CIO played a role in his decision to resign. "Without that story," he says, "all of this could have lay dormant for another two years."

Tisi isn't the only one to take away something from this assignment. Working with Art over the last few months, I've gained an unexpected friend, and that's more important than any story could ever be.

—Matt Villano, CIO contributing writer



PHOTO BY JASON HOMA

**We  
think**

therefore we are...

successful

strategic

respected (even revered)

agents of change

Simply put, Gartner is the world's leading authority on information technology. We are utilized as a "think tank" by key players in the corporate community, many members of which would not make a decision without us. We provide top-level guidance in a range of IT areas to over 10,000 clients – from start-up to blue chip – by providing the most collaborative and customized delivery of world-class thought leadership and global expertise.

**Gartner**  
insight for the  
connected world

The implications for you if you were to join our team?

Think about it. The visibility that comes with high-profile projects. To have an impact. An opportunity to share ideas with some extremely smart people. All in an environment that is relaxed and collegial...and truly supportive.

Don't you owe it to yourself to find out more about our opportunities?  
(As you would expect, details are on our site.)

[www.gartner.com/careers](http://www.gartner.com/careers)

E.O.E.



# CIO Portfolio

Products and Services from CXO Media

## In Future Issues

### A Web Team Divided

To attract IT talent, focus staff on Web initiatives and get their websites up to speed as quickly as possible, many companies are splitting their IT groups into two divisions—one to work the Web and the other to maintain legacy systems. IT leaders must work to keep the groups together and maintain comradery despite the split.

### The New Business of Wine

The art of wine-making has been practiced for thousands of years. In fact, it's only recently that the wine industry has begun to view itself as a business at all. So it's not surprising to find that the wine industry has lagged behind most other industries in its adoption of information technology. But globalization, increased demand for wine and the e-commerce explosion are pushing wine companies—both large and small—to accelerate their use of IT. Learn how IT is revolutionizing the world of wine.

### Offshore Outsourcing

Offshore outsourcing isn't new, but thanks to a chokingly tight IT labor supply and the zero-time-to-market demands of the Internet, more and more companies are contracting with offshore firms for everything from legacy-system maintenance and customer service to development of mission-critical applications and commercial websites. Read how they've done it.

## Executive Programs

### The Second Annual CIO-100 Symposium

Aug. 13-16, 2000 • Hotel del Coronado San Diego

The CIO-100 Symposium & Awards is a three-day program focusing on leadership and innovation for the future of the enterprise. Through interactive presentations and discussions from leading experts, participants will learn how innovation and leadership are enabling companies to succeed in the millennium.

The Symposium also brings to life and honors the achievements of 100 industry-leading enterprises.

*For more information, call 800 355-0246 or e-mail CIO Executive Programs at registrar@cio.com.*

### CIO Perspectives Conference

#### Greater Expectations:

#### The CIO and Corporate Strategy

Oct. 15-18, 2000 • The Arizona Biltmore Phoenix

The demands of leadership in this new economy are growing. CIOs already support business strategy by utilizing a specialized understanding of technology and effectively leading IS. However, to attain the broadest impact in shaping the future, CIOs are stepping up and becoming broad-based enterprise leaders capable of envisioning, promoting and driving business strategy.

*For more information, contact CIO at 800 366-0246, visit our website at [www.cio.com/conferences](http://www.cio.com/conferences) or e-mail CIO Executive Programs at registrar@cio.com.*

You've  
Got

Problems

Our experts are online now to answer your business and IT questions.

### Ask the Expert

Our guest experts spend two weeks on the site, covering topics from employee retention to global e-business.

[www.cio.com/CIO/expert](http://www.cio.com/CIO/expert)

### Executive Career Counselor

Ask Korn/Ferry International's Mark Polansky for advice on managing your career, and you won't be disappointed.

[www.cio.com/forums/executive/counselor.html](http://www.cio.com/forums/executive/counselor.html)

### Ask the Author

Your favorite business authors are waiting in CIO's Reading Room to lend you their expertise.

[www.cio.com/books](http://www.cio.com/books)

### CIO Connection

Tap in to CIO's discussion forums and get feedback from some of the best-informed sources around—CIO readers.

[discuss.cio.com](http://discuss.cio.com)



**Conference: October 3-6, 2000 • Expo: October 4-6, 2000**  
**San Jose Convention Center • San Jose, California**

Application Service Providers  
**ASP WORLD**  
CONFERENCE & EXPO

- What is an ASP?
- Do you understand the entire range of outsourcing options?
- Are you informed about ASP services and products?
- What is the competitive advantage of outsourcing IT? How can it improve your business? How has outsourcing IT improved your competitors' business?

Get the answers before someone asks you the questions!

As the only major ASP event focused on the end-user, ASPWorld Conference & Expo provides a unique educational opportunity designed for corporate and IT decision-makers who are evaluating outsourced applications from a business and technical perspective!

Sponsored by leading visionaries, analysts, users and suppliers in the ASP marketplace, this brand-new event lets you learn all your ASP options right now all on one show floor!

In addition to your free Expo Badge, registrants receive the following valuable resources critical to understanding this emerging market:

- Up-to-date market data
- Decision Support Guide
- ASP Market Taxonomy
- Information on the latest ASPs and services
- Data on what your competition is doing
- Special introductory sessions addressing your questions

**[www.aspworldexpo.com](http://www.aspworldexpo.com)**

**Register early for special savings!**

To Exhibit, please call toll free 1-877-696-0459

To Attend, please register online at [www.aspworldexpo.com](http://www.aspworldexpo.com)

ASPWorld Conference & Expo • 3 Speen Street, Suite 320, Framingham, MA 01701

©2000 IDG World Expo. All rights reserved. All other trademarks contained herein are the property of their respective owners.

**The Smarter  
Way  
to Do IT.**

Owned and Managed by:

**IDG**  
WORLD EXPO

Flagship Sponsor

**NetworkWorld**

Corporate Sponsor

**IDC**

Partner Pavilion  
Sponsor



SEVEN MOUNTAINS



ARISTA  
1011

Platinum Sponsors

**ensim**  
ENTERPRISE SOFTWARE

**JD Edwards**  
ENTERPRISE SOFTWARE

**netASP**  
ENTERPRISE SOFTWARE

**ManagedOps**  
ENTERPRISE SOFTWARE

Gold Sponsors

**Surebridge**

**Agilera**

**searchASP.com**

**INFINIUM**  
do great work

Silver  
Sponsor

**Alumbre**  
Technologies

**sage**

Association  
Sponsor

**ITAA**

Media Sponsors

**street**  
.com

**INFO**  
WORLD

**CIO**

**ASPnews**  
.com

**inc**  
mag

**Communications News**

**aspRegistry.com**



# Index of Companies and Advertisers

*Page numbers refer to the first page of the article(s) in which the company is mentioned. This index is provided as a service to readers. The publisher does not assume any liability for errors or omissions.*

## Company Index

Aberdeen Group .....170  
 Acxiom Corp. ....106  
 AIG Inc. ....32  
 Allied Riser Communications Corp. ....170  
 Amazon.com Inc. ....160  
 America Online Inc. ....182  
 Andersen Consulting .....114  
 Ariba Inc. ....102  
 Asera Inc. ....102  
 @Thought Technologies LLC .....76  
 Baan Co. NV .....32  
 Benchmarking Partners Inc. ....32  
 Bid.com International Inc. ....170  
 BrandStamp .....102  
 British Telecommunications PLC .....114  
 Cahners In-Stat Group .....170  
 CAIS Internet Inc. ....170  
 Calico Commerce Inc. ....102  
 Cambridge Incubator .....102  
 Cambridge Technology Partners .....146  
 Cap Gemini Ernst & Young .....170  
 Capital One Financial Corp. ....32  
 Changepoint Corp. ....102  
 Chase H&Q .....102  
 Circline Inc. ....72, 76  
 Claremont Technology Group .....132  
 Clicksure Ltd. ....32  
 Columbia/HCA Healthcare Corp. ....56  
 Commerce One Inc. ....102  
 Corning Inc. ....90  
 Crestone International LLC .....170

Digital Persona Inc. ....32  
 Dyson Appliances Ltd. ....32  
 eBay Inc. ....72, 102  
 EDS Corp. ....114  
 EMC Corp. ....146  
 Envisionworks Inc. ....72  
 Epiphany Inc. ....102  
 Equalfooting.com Inc. ....72, 90  
 Evolve Software Inc. ....102  
 Exodus Communications Inc. ....102  
 Feld Group Inc., The .....64  
 Foote Partners LLC .....76  
 Fujitsu Ltd. ....114  
 Gartner Group Inc. ....106  
 Greyware Automation Products .....170  
 Hay Group, The .....132  
 Hewlett-Packard Co. ....102  
 Houghton Mifflin Co. ....146  
 Hummingbird Ltd. ....170  
 IBM Corp. ....32, 106, 114  
 ICT Group Inc. ....32  
 IDC Corp. ....32  
 Idealab Inc. ....32  
 Individual.com Inc. ....182  
 Informission Group Inc. ....32  
 Institutional Venture Partners .....102  
 Integral Capital Partners .....102  
 Internet Security Systems .....32  
 Invensys PLC .....102  
 Inventa Corp. ....102  
 J.D. Edwards & Co. ....32  
 Jackson Hewitt Inc. ....190  
 Kleiner Perkins Caufield & Byers .....102  
 Knowledge Universe Inc. ....106  
 Lawson Software .....76  
 Lotus Development Corp. ....146  
 Lucent Technologies Inc. ....146  
 Marsh & McLennan Companies Inc. ....32  
 Maximus Inc. ....32

Metropolitan Life Insurance Co. ....146  
 Microsoft Corp. ....32, 76, 106, 182  
 Mithral Communications and Design Inc. ....170  
 Nestor Inc. ....170  
 Netscape Communications Corp. ....182  
 Network Associates Inc. ....102  
 New Technology Holdings LLC .....182  
 Niku Corp. ....102  
 OpenReach.com Inc. ....170  
 Oracle Corp. ....102  
 Oracle Venture Fund .....102  
 PeopleSoft Inc. ....102  
 Pingpong.com Inc. ....170  
 Pinnacle Systems Inc. ....102  
 Porivo Technologies Inc. ....170  
 Portera Systems .....72, 92, 102  
 PricewaterhouseCoopers .....32  
 R.R. Donnelley & Sons Co. ....106  
 Research in Motion Ltd. ....170  
 ReSourcePhoenix.com .....102  
 Respiration Inc. ....90  
 Rhythm of Business Inc., The .....102  
 RRE Ventures LLC .....102  
 SAP AG .....102, 182  
 SAS Institute Inc. ....170  
 Siebel Systems Inc. ....76  
 Siemens AG .....114  
 Software Shelf International Inc. ....170  
 Spencer Stuart and Associates .....132  
 Spring Creek Partners .....102  
 Sprint Corp. ....170  
 Sun Microsystems Inc. ....102, 114  
 Sybase Inc. ....102  
 System Software Associates Inc. ....32  
 Tecmar Inc. ....170  
 Toysmart.com .....72  
 Transition Partners Ltd. ....64  
 USinternetworking Inc. ....102  
 Van Wagoner Capital Management .....102



|                                           |     |
|-------------------------------------------|-----|
| Vignette Corp. ....                       | 76  |
| Vodafone AirTouch PLC ....                | 102 |
| Weiss, Peck & Greer Venture Partners .... | 102 |
| Worldgate Communications Inc. ....        | 32  |
| Yahoo Inc. ....                           | 182 |

#### Advertiser Index

|                                |                           |
|--------------------------------|---------------------------|
| Account4.com ....              | 55                        |
| Advanced Micro Devices ....    | C2                        |
| Ajilon ....                    | 117                       |
| Amdahl Corp. ....              | 29                        |
| Ariba Technologies ....        | 4                         |
| Asera ....                     | 165                       |
| ASP World Conference ....      | 205                       |
| Aspect ....                    | 51                        |
| AT&T ....                      | 179                       |
| Attachmate Corp. ....          | 41                        |
| Auspex ....                    | 159                       |
| BackWeb Technologies ....      | 79                        |
| BMC Software ....              | 26                        |
| Changepoint Corp. ....         | 149                       |
| Clarkston Potomac ....         | 88                        |
| Comdisco Inc. ....             | 57                        |
| Commerce One ....              | 155                       |
| Compaq Computer Corp ....      | 157                       |
| Computer Associates Intl. .... | 7, 707                    |
| CXO Media ....                 | 112, 144A, 145, 176A, 177 |
| Data General Corp. ....        | 163                       |
| Datachannel Inc ....           | 11                        |
| Dell Computer Corp. ....       | 16                        |
| eJiva ....                     | 153                       |
| Electron Economy ....          | 20                        |
| Element K ....                 | 65                        |
| Ernst & Young LLP ....         | 74                        |
| eXcelon Corp. ....             | C3                        |
| Gartner/IT Careers ....        | 203                       |
| Genuity ....                   | 199                       |
| Hyperion Solutions ....        | 151                       |
| IBM Corp. ....                 | 63, 121, 193              |
| InfoDream ....                 | 109                       |
| InRange Technologies ....      | 105                       |
| Intel Corp. ....               | 44                        |
| International Data Corp. ....  | 201                       |
| Intira ....                    | 64A                       |
| Inverge ....                   | 83                        |

|                                       |                |
|---------------------------------------|----------------|
| Inxight ....                          | 169            |
| Kana Communications ....              | 38             |
| Kingston Technology ....              | C4             |
| Lands End Inc. ....                   | 173            |
| Liebert Corp. ....                    | 129            |
| Mentor Technologies ....              | 197            |
| Micron Electronics ....               | 19             |
| NEC Technologies ....                 | 30             |
| NetSolve ....                         | 85             |
| Network Ice ....                      | 25             |
| Network Solutions ....                | 143            |
| Networld + Interop ....               | 65             |
| NexTel Communications ....            | 139            |
| Niku ....                             | 87             |
| Nortel ....                           | 12             |
| Northern Light<br>Technology LLC .... | 69             |
| Novell ....                           | 67             |
| ObjectSpace Inc. ....                 | 123            |
| Oracle Corp. ....                     | 15             |
| Ordertrust ....                       | 135            |
| Pacific Edge Software ....            | 93             |
| Pandesic ....                         | 37             |
| Partnerware ....                      | 167            |
| Peoplesoft Inc. ....                  | 49, 95, 97, 99 |
| Planview ....                         | 59             |
| Primavera Systems Inc. ....           | 125            |
| Quantum Corp. ....                    | 8              |
| Raging Knowledge ....                 | 131            |
| Remedy Corp. ....                     | 187            |
| SAP ....                              | 175            |
| SAS ....                              | 33, 61, 181    |
| Savvis Communications ....            | 183, 185       |
| Secure Computing Corp. ....           | 119            |
| Segue Software ....                   | 195            |
| Selectica ....                        | 47             |
| siteROCK ....                         | 35             |
| SiteSmith ....                        | 43             |
| Symantec Corp. ....                   | 2              |
| Tonic Software ....                   | 100            |
| Unisys Corporation ....               | 23             |
| USInternetworking Inc. ....           | 191            |
| ValueWeb ....                         | 189            |
| Viewsonic ....                        | 53             |
| Webvision Inc. ....                   | 141            |

#### Editorial, Advertising and Business

**Offices:** 492 Old Connecticut Path, P.O. Box 9208, Framingham, Massachusetts 01701-9208, (508) 872-0080.

**Postal Information:** *CIO* (ISSN 0894-9301) is published semimonthly; and as a combined issue December 15/January 1 by CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, Massachusetts 01701-9208. Periodicals postage paid at Framingham, Mass., and at additional mailing offices.

**Reprints:** Copyright 2000 by CXO Media Inc. All rights reserved. Reproduction of material appearing in *CIO* is forbidden without written permission. Send all reprint requests to Permissions Department, *CIO*, 492 Old Connecticut Path, P.O. Box 9208, Framingham, Massachusetts 01701-9208.

**Photocopy Rights:** Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by *CIO* for users through the Copyright Clearance Center (CCC), provided that the base fee of \$3.00 per copy of the article, plus \$.50 per page is paid directly to Copyright Clearance Center, 27 Congress Street, Salem, Massachusetts 01970. Please specify: ISSN 0894-9301. Permission to photocopy does not extend to contributed articles followed by this symbol: ‡.

**Subscriptions:** Address inquiries to *CIO*, 492 Old Connecticut Path, P.O. Box 9208, Framingham, Massachusetts 01701-9208; 800 788-4605. *CIO* is free to qualified information executives. To all others the one-year basic rate is \$94 for U.S. and Canada, \$175 to foreign countries (payable in U.S. funds only). The single copy price is \$9. Please allow 4 to 6 weeks for new subscriptions to begin.

**Change of Address:** Please fax a copy of current subscription label along with new address to 508 879-7899. Allow 4 to 6 weeks for change to take effect.

**Postmaster:** Send change of address to *CIO*, P.O. Box 489, Northbrook, Illinois 60065-9816. Printed in the U.S.A.



# Interview

BY DEBBY YOUNG

## Kevin SCHMIDT

*Kevin Schmidt is president of Envisionworks in Orland Park, Ill., a consultancy specializing in behavioral change for IT professionals.*

**CIO:** You say that incivility in IT organizations has a negative impact on a company's bottom line. Isn't that a bit alarmist?

**SCHMIDT:** No. IT has a strategic importance that it didn't 10 years ago. You need people to do more, quicker—and what they're doing is more critical to the success of the business. Productivity must stay high. Incivility in the workplace has been statistically proven to significantly reduce productivity—through lost work time, cutbacks in effort and reduced commitment. (See "Sticks and Stones," Page 48.) The data also shows that incivility accounts for about 12 percent of turnover. Obviously, every time someone leaves you've got replacement costs and lost knowledge.

### What constitutes uncivil behavior?

People think of civility as manners—as please and thank-you. But we're talking about something different: workplace norms for mutual respect. Incivility includes rumoring,

making decisions without consulting others, failing to build consensus or even having a culture where every project is a death march. Nine times out of 10, people instigating the incivility do not even recognize it. Yet it can lead to project failure and increased turnover.

### How can a CIO combat workplace incivility?

The beauty of it is that IT people are incredibly smart. Once they've been made aware of it, with a bit of help they can usually make a substantial change with good results.

We recently worked with a Fortune 50 company that had an IT staff of maybe 400 people and an IT budget in the tens of millions of dollars. But it definitely had a death-march culture. The CIO could call the president of any vendor and make things happen. But this power wasn't used because people were afraid to give him bad news. He'd react with tirades, refusals to listen, threats to their

jobs. They were in the middle of this giant global system rollout, and pieces of the project were falling behind. People were afraid to seek his counsel, even though they knew he could probably help.

### How did you turn the situation around?

We spoke to all the IT employees involved. We shared their perceptions with the CIO and did some one-on-one coaching with him. We helped him see how his uncivil behavior was paralyzing his employees. The intervention helped him change the way he interacted, which, in turn, changed the way his staff reacted, and ultimately drove up productivity and teamwork, even preventing some employees from quitting. **CIO**

Debra Young is a freelance writer in Framingham, Mass. E-mail us at [interview@cio.com](mailto:interview@cio.com) with your thoughts on what makes a workplace civil.







It's time to start thinking out of the box  
when it comes to business to business.



**Dynamic B2B.** The power to work with anyone, any way you want. Now you can expand your trading network to include all partners, from small to large to eMarkets. Then maximize those partnerships by integrating them into your enterprise business process with a flexible, XML-based solution. The future of eBusiness is Dynamic B2B. eXcelon is already there.

For more information, visit [www.exceloncorp.com](http://www.exceloncorp.com).

**eXcelon™ corp.**



**SUNRISES, SUNSETS, AND KINGSTON SERVER MEMORY.  
GUARANTEED RELIABLE.**



**FEW THINGS IN LIFE ARE GUARANTEED.** So when you find something that is, you stick with it. That's why more Fortune 500® companies standardize on Kingston® server memory than any other memory brand. Because Kingston guarantees reliability with every module it ships. How? By subjecting each module to the most rigorous testing in the industry. By promising the highest server uptime available. And by certifying 100% compatibility with the system or class of systems it was designed for. Add free technical support, and a lifetime warranty, and you've got memory guaranteed to get you through a lifetime of sunsets. Don't wait until tomorrow. Get the industry's most reliable memory today. Go to [www.kingston.com/jump/reliable](http://www.kingston.com/jump/reliable) and register to receive your free Kingston server guide. Or call (888) 435-5169.

